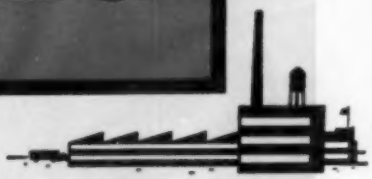
APRIL, 1961

Industrial FINISHING



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The Force Drying of Wood Finishes
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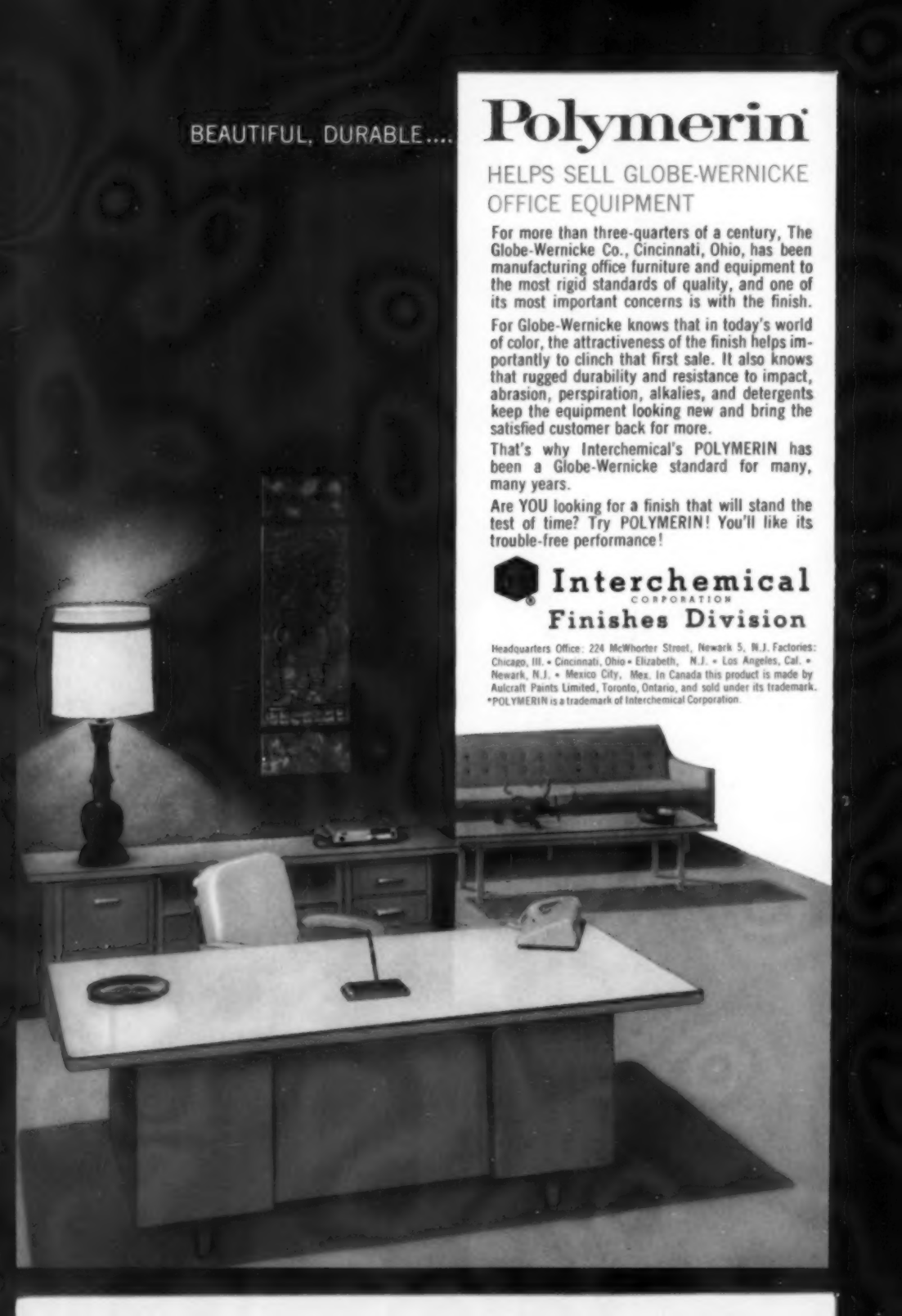
For 37 Years The Leading Publication Serving The Finishing Industry



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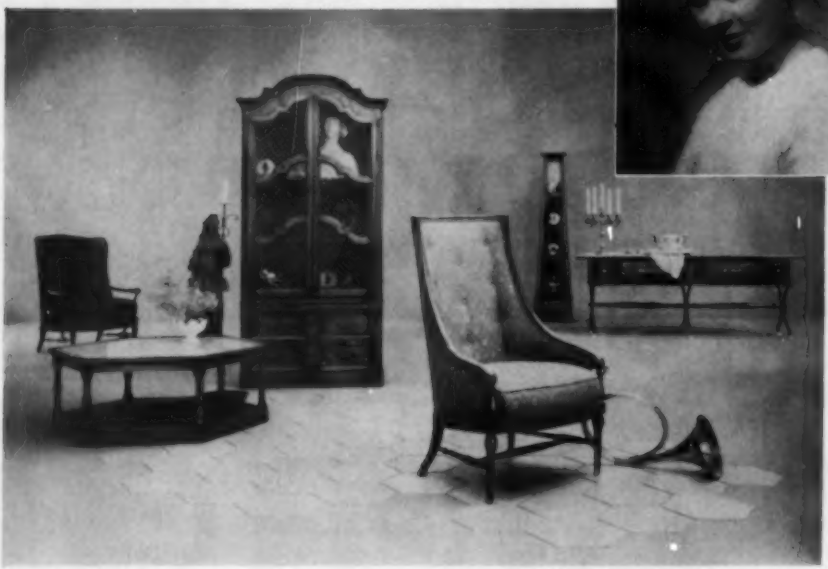

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Industrial FINISHING

W. H. ROHR, *Editor* — P. C. BARDIN, *Field Editor*

April, 1961
Vol. XXXVII, No. 6

ABCA

A monthly magazine for company executives, production superintendents, process engineers, chemists, purchasing agents, paint shop and finishing department foremen of industrial plants where product surface cleaning and painting are major operations in the manufacture of parts and products of all kinds.

★

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West Coast Editor
CHAS. R. BROWN

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Accepted as Controlled Circulation Publication at Indianapolis, Indiana

37 THIRTY-SEVENTH YEAR OF PUBLICATION

Fires and Explosions. Recommended practices and procedures in establishing emergency sections in chemical plants to take over responsibility to combat such destructive forces as fires and explosions are now available from the Manufacturing Chemists' Association, Inc.

The pamphlet, outlining areas of responsibility of both company management and its emergency organization, emphasizes that "it is very important that the responsibility for developing and administering the emergency plan be delegated to a respected and responsible individual representing management."

Copies of the MCA emergency organization pamphlet are available from MCA offices, 1825 Connecticut Ave., N. W., Washington 9, D. C., at 20 cents each.

* * *

Fast Furniture Repair. As furniture is moved around before leaving the plant, invariably it is slightly damaged with nicks, scars or scratches. These have to be repaired. Sca-Rid fills in the digs, gouges, scars and scratches. It comes in 62 different shades for wood, and 18 for metal, including gold, bronze, copper, platinum, silver, etc.; also for picture or mirror frames or decorative work.

Sca-Rid can be used as a pencil or it can be applied with a hot knife.

Bonding Strength. New self-bonding silicone rubber compounds and reinforced gums that afford a primerless bond to ferrous-containing metals, stronger than the highest strength silicone rubber, have been developed by the Silicone Products Department of General Electric, Waterford, N. Y. This material will be of use to mechanical rubber fab-

Here a ¾-in. diameter slug of the material bonded between nail heads (see inset) easily sustains the weight of a young lady on a trapeze rigging.

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Our experienced laboratory and technical engineers are available to develop a top quality Custom Finish for you—in keeping with present day color trends.

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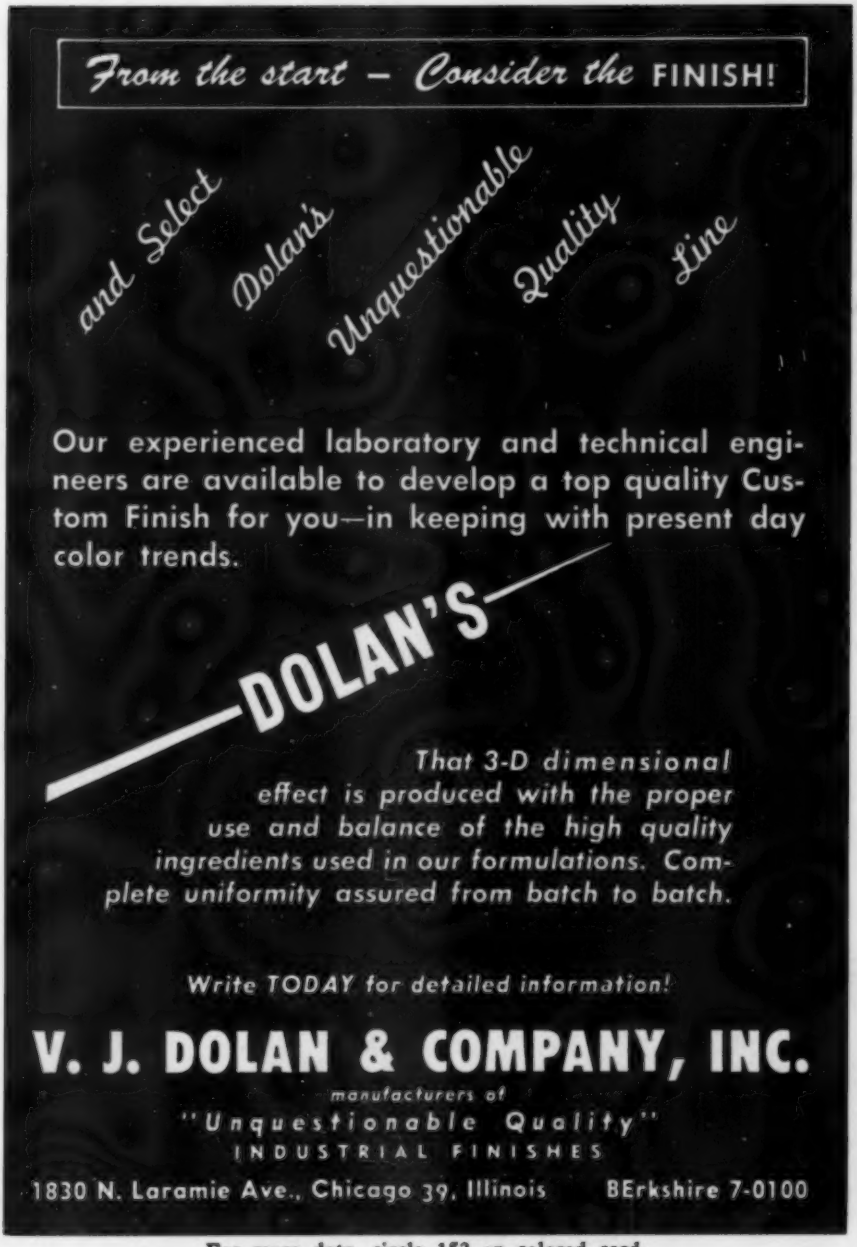
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ricators and to specialty firms for shock mounts, rubber rolls, oil seals and a variety of other products where high-strength, trouble-free bonds are desired.

* * *

Prime-Coated Hardboard. A new prime-coated, tempered hardboard for exterior applications is being introduced to the building industry by Weyerhaeuser Co.'s Silvatek Division. This new product line, Prime-Coat Weytex, is the culmination of a 3-year program of product and process development to make sure it meets all exterior use requirements.

The company's Longview research laboratories conducted investigations of available exterior prime coat materials, putting the best of them through paint adhesion, weatherometer and exposure panel tests.

Prime coating on the new tempered Weytex is a modern resin base material in a light gray tone, dark enough for complete coverage and light enough to be covered readily even with a lighter colored second coat. It provides a hard, durable surface that is an excellent base for top coats on the tempered panel, which is already highly resistant to moisture, sun and extremes of exposure to the weather.

* * *

Plastic Steel for Repairs. Magic Steel, an extremely strong new metal mender, made of steel in plastic form, is announced by Magic Iron Cement Co., Inc., 14215 Caine Ave., Cleveland 28, Ohio.

It is suggested for soldering, sealing, repairing and filling all metals. In addition, Magic Steel sticks fast to wood, glass, porcelain, concrete, stone and other construction materials.

Applied without heat or tools, Magic Steel dries metal-hard in 2 to 3 hours. Then, it can be filed, sanded, drilled or painted when dry and is unaffected by water, oil, gasoline and most chemicals. It won't rust or corrode.

* * *

Nameplate Sticks on. If you are searching for ways to lower the selling price of your product, the Allen Hollander Co., Inc., of 385 Gerard Ave., New York 51, N. Y., may have a partial answer. The firm has recently developed "Name-Stiks" as the modern replacement for metal nameplates.

These "Name-Stiks" are available in either flat or embossed metallic foils and printed in as many colors as required. These pressure-sensitive "Name-Stiks" utilize a permanent-type adhesive that, once in place, cannot be removed. They can be used on metal, plastics, ceramics, glass or wood; in fact, they will hold securely on any clean, smooth surface.

* * *

New Resin for Coatings. Pentalyn 255 by Hercules Powder Co., Synthetics Department, is a new resin that is soluble in alcohol and in aqueous ammonia. It is compatible with polystyrene, acrylic, PVA, polyethylene and polymer emulsions.

Special properties add gloss, hardness and flow without loss of flexibility in paper coatings, leather finishes, latex and emulsion paints.

* * *

Corrosion Resistant Bushings made of du Pont's Delrin are being used in conveyor chain rollers. The bushings are highly resistant to moisture and corrosion and have a low coefficient of friction so that little or no lubrication is required. They can be continuously cleaned with water at temperatures up to 180° F., or they may be steam cleaned.

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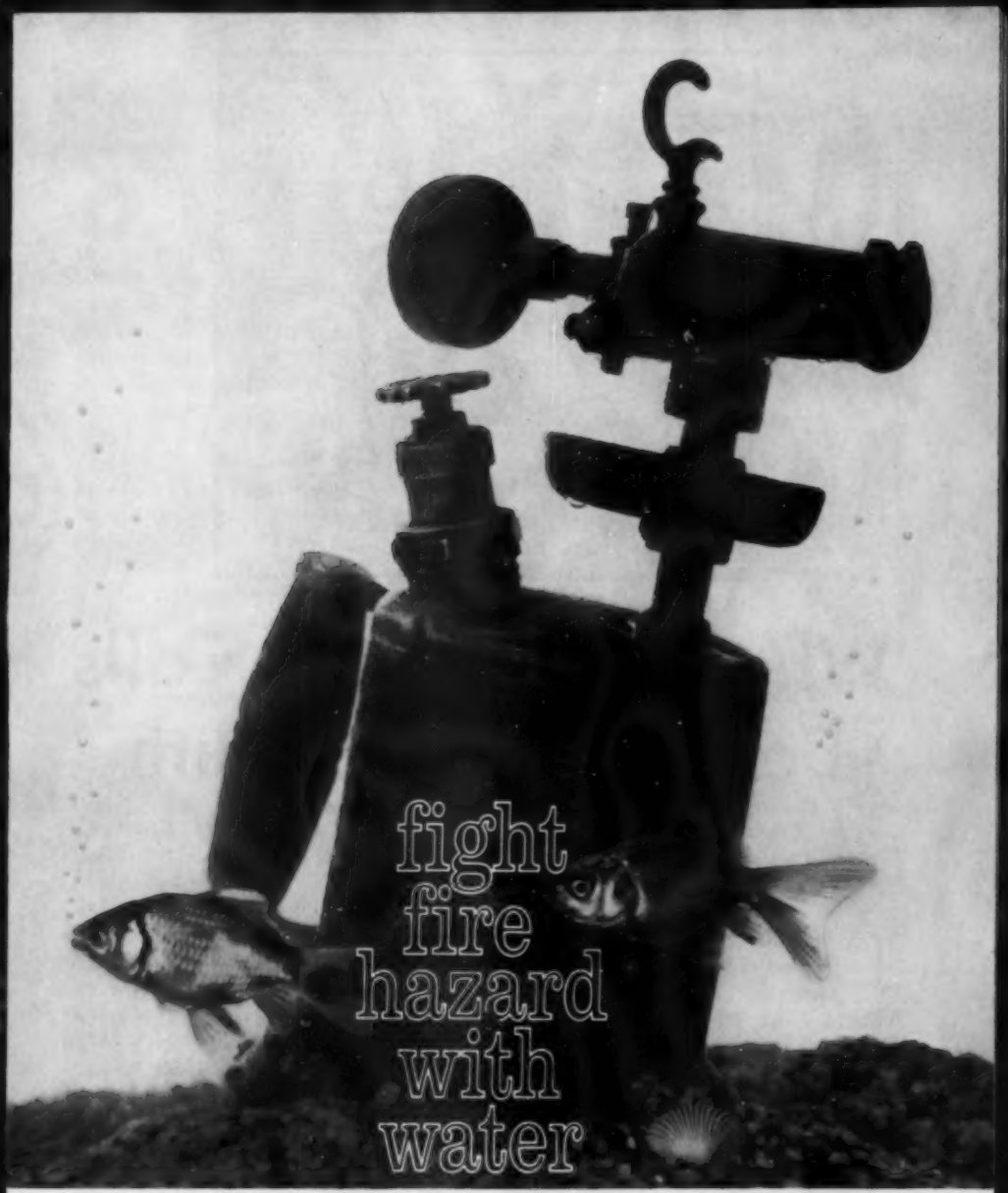

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When a Salesman Calls Be Courteous to Him

BY C. RAYMOND SYER

IN THIS ARTICLE I hope to tell you why the paint finishing salesmen should be shown courtesy at all times. By this I mean that when a salesman calls on you or your purchasing agent, he should not be ignored. He should be given the opportunity to present his story. I believe that in most instances he does get a chance to explain his products. This includes salesmen who sell paint finishing equipment.

A successful purchasing agent, paint technician or paint foreman will interview these men, and one of the pre-requisites is to be a good listener. Give the salesman the privilege of a pleasant interview. That salesman is evidently sold on his product or he wouldn't be successful. I learned this some years ago while employed as an inventory control clerk in a large industrial plant.

That Carbon Paper Incident Taught Me a Lesson

I believe this story sets forth a good example of what I am trying

to explain. In this plant the young assistant purchasing agent had very little experience. He ordered most of the miscellaneous items, such as office supplies, etc. The purchasing agent bought the expensive raw materials. One day a salesman submitted his card to the receptionist who, in turn, informed the assistant purchasing agent that a salesman wished to talk to him about some carbon paper that offered superior performance. Mr. Assistant PA promptly replied that he was not interested; he had heard no complaint about the carbon paper they had been using for the past several years.

The P.A. overheard this conversation and he was interested. He asked the salesman to come in and see him. After he had listened to Mr. Salesman he became more interested. Perhaps it was a better grade of carbon paper than what the company was then buying and using. He asked for six sheets for an evaluation test. The P.A. passed them out to several stenographers and asked them to make a comparison between the new and the old carbon paper. The evaluation test showed the new carbon paper to be of superior quality. As many as six clear copies could be made without any smudging. This performance could not be obtained with the carbon paper they were presently using.

While these evaluation tests were being conducted the salesman was asked to wait in the lobby. The result of this interview revealed the fact that the cost of their carbon paper could be reduced 50% annually, with more mileage; and

"How do you know what I've got if you don't stop, look and listen?"

it was not necessary to type a letter or other documents the second time when six copies were required. This interview paid off.

Now carbon paper is not expensive, but this incident taught the assistant purchasing agent that it was a good policy to interview every salesman, regardless of how he felt about what the company was using at the time. This same condition can occur with salesmen selling finishing materials and equipment.

Listen to Salesman's Story; He May Have What You Need

There is always the possibility that your visitor may be a salesman who has a product that has been formulated to give better mileage, improved adhesion, greater mar-resistance, etc.; or he may have a new type of equipment that

"The least you could do is turn off the ball game!"

could reduce your operating cost, both in labor and material.

I have never refused to see a salesman, and to listen to his story. By using this approach I have learned considerable about new materials, improved equipment and better methods of application.

Today most salesmen are well qualified to sell their products. In many cases these salesmen have been put through a rigid training course before being placed on the road. Obviously, the more time they devote to selling and the greater the number of interviews they have, the more experienced they become.

Before Blaming Any Material Check Into These Possibilities

At some time we all have our troubles in this industry. When trouble occurs we must go through a process of elimination to find the cause. As we all know, many factors are involved and there are times when we just can not determine the real cause immediately. For example, here are some of the questions we should check into:

Is the proper solvent being used to reduce the material? Is the material being reduced to the correct viscosity? Is it being mixed properly, and being agitated thoroughly? Are the hose lines, spray guns or other equipment clean and in proper working condition? Are we using the correct atomizing and fluid pressures? If we are spraying materials, are we using the correct combination at the spray gun—air cap, fluid and atomization setup, nozzle and needle?

Has the material been thoroughly strained where straining is necessary? Are we using the proper baking schedule, time and tempera-

"What in blazes do I know about viscosity, agitation, atomizing and fluid pressures? What are you trying to do, confuse me with facts?"

The wrong finishing touch can ruin a perfect job.

You'll never go wrong with UNITED! Because UNITED custom-matches the finish to your product . . . furniture, appliances, jewelry, steel cabinets, steel office furniture, toys. No matter *what* your product or problem, if you start with a UNITED finish, you'll end up with MORE buyers, BIGGER sales! United Industrial Finishes are scientifically made to exacting standards . . . priced to meet today's competitive markets. Durable, tough, resilient . . . available in baking enamels, air-dry enamels, lacquers, Epoxy finishes and other basic materials necessary for a perfect finish. If you're looking for product durability and beauty, UNITED'S finish will do the job . . . quickly, easily, economically. For more specific information, free sample and color card—write, specifying your particular product needs. Free Technical Consultation Service available on request.

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ture? Are our baking ovens working efficiently? Are the operators acquainted with the control procedures and proper spraying technique, as well as many other factors?

These are some of the things we should look into when we are in trouble, and before we condemn the paint or finishing material. Then, when we feel certain that our process and operations are correct, we should call on the paint supplier for his assistance.

When to Call in A Technician; When to Ask for a Sample

There will be times when the salesman cannot be of help—and here is where I feel it is important to call the man who formulated the material. Then he can get acquainted with your system first hand. At this time he may also find some reason for failure because he learns more about your production system, and how the material is being used. It will be good experience for him.

I would like to end this article by saying something about sample materials. *Samples should never be requested unless you are definitely interested in making evaluation tests, with the idea in mind that if they are acceptable an order will be issued.* If you are unable to purchase a salesman's material it is much better to tell him so rather than to put him and his company to the expense of formulating samples and wasting the salesman's time. Treat other companies' salesmen as you would have other concerns treat your salesmen or representatives.

"Sure, dump your samples in that bin; someday we may get around to analyze 'em."

The Glidden Co. Now Has An International Division

Creation of a fourth major division of The Glidden Co.—the International Division—was announced recently by Dwight P. Joyce, chairman and president.

Mr. Joyce also stated that A. D. Duncan, vice president of the company and general manager of the Paint Division, has been appointed head of the new division. He will assume his new duties on April 1.

The International Division will be responsible for all activities of the company outside of the U. S. and Canada. This will include export sales of any of Glidden's products, licensing agreements, capital investments and present activities of Glidden International, C. A., and other foreign subsidiaries.

Inspection Lights

A bulletin describing and illustrating 12 types of inspection lights, including pocket lights, has been issued by Welch Allyn, Inc., 206 Jordan Rd., Skaneateles Falls, New York.

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a better, lower cost, easily controlled phosphate coating that LOCKS your finish to the metal.

Interlox's unusual cleaning ability and radically different accelerator produce an even, fine grained coating that locks an organic finish to the metal ● Interlox gives you the ultimate in appearance, adhesion and corrosion resistance — no streaks, stains, powdery residue or flash rusting. Interlox baths are unusually long lived and require less replenishment and control ● Extra cleaning power is easily obtained by the addition of a low-cost detergent only, avoiding the danger of over-phosphatizing by adding complete phosphatizing compound when only cleaner is needed ● Interlox is available in spray or immersion type, single or multiple stage.

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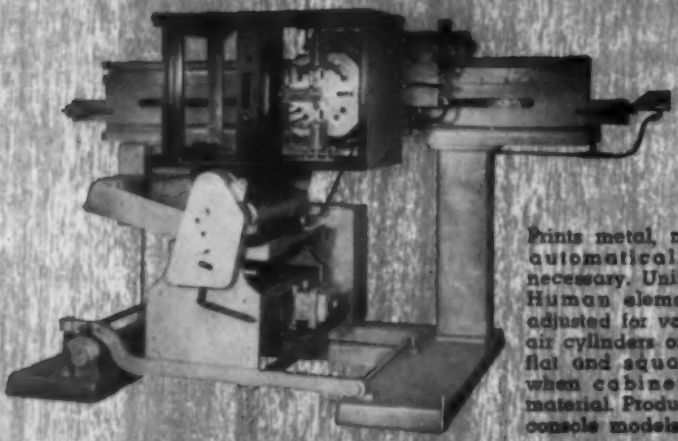

Prints metal, masonite or wood cabinets automatically. No jigs, no fixtures necessary. Uniform printing, no misprints. Human element eliminated. Quickly adjusted for various sizes. Cabinet held by air cylinders on inside, assuring a perfect, flat and square printing surface even when cabinets are made of thinnest material. Production-2 per minute on large, console models.

Wood

This machine is built in various sizes from the narrowest up to 98" wide, for the graining of various sizes and thicknesses of panels, tables and similar work. Can also be used for edge graining. Explosion-proof motor is mounted beneath a solid base, eliminating fire hazards.

This trademark SCHMUTZ recognized as builders of fine printing machinery since 1923.

This trademark is known not only in this country, but throughout the world for modern and highest quality printing machinery. Now manufacturing more than 60 different types and models.

VISIT OUR PLANT, SEE THE MACHINES UNDER CONSTRUCTION AND DOING ACTUAL WORK ON OUR TEST FLOOR.

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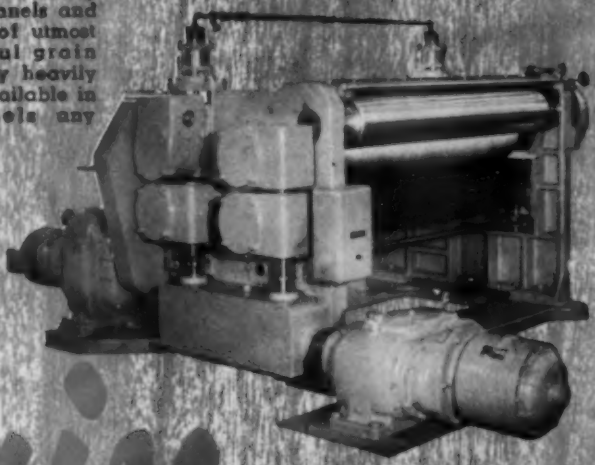
U. S. A.

Reverse Roll Coater for eliminating imperfections in hardboard panels and other sheet material, which is of utmost importance in securing beautiful grain effects. These machines are very heavily and accurately built and are available in two sizes for 36" and 48" panels any length and up to 2" thick.



Grain

REPRODUCING EQUIPMENT

This large, heavy duty machine has been especially designed for printing unusually beautiful grain effects on large panels. Panels are automatically fed through the machine so that perfect registration of design can be had. Machine carries two sizes of engraved cylinders: 10" diameter for straight grain and 20" diameter where design of wood is such that repeating is objectionable. Standard size machines will handle panels 36", 48" and 84" wide, up to 12' long and from the thinnest to 2" thick.

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Industrial FINISHING

April 1961, Issue

Reader Service Department

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INDUSTRIAL FINISHING Magazine for information about technical paint coating problems, methods and processes; and for sources of supply for organic finishes, equipment and supplies to be used in connection with surface preparation and conditioning, paint application, sanding, paint drying, and baking, rubbing, polishing, etc.

Surfaces to be completely or partially coated for protection, decoration or for any other purpose, include components and articles made of metals, plastics, woods, and composition materials; also paper, leather, rubber and fabrics.

The services of many testing laboratories, finishing consultants and special technicians are often available.

The inquiries are promptly answered. As a result, new products, materials and sources of information are continually being uncovered; valuable contacts are made and timely suggestions for future articles to be published are often developed.

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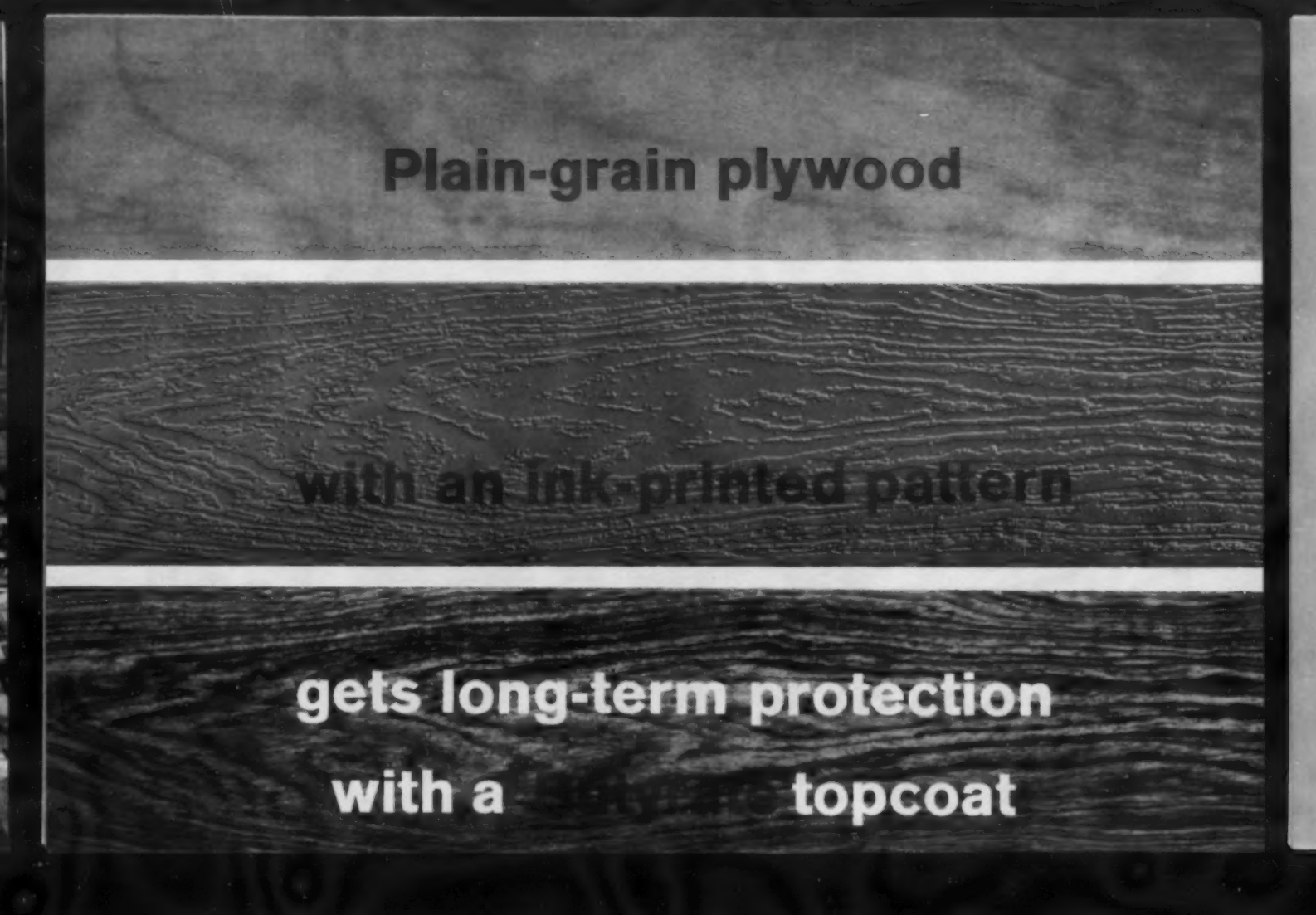
Plain-grain plywood
with an ink-printed pattern
gets long-term protection
with a topcoat

The cinderella of the wood world is the plain-grained plywood that is transformed into beautiful wood panels within minutes by grain printing.

This finishing process is capable of producing a variety of grain colors and patterns such as rosewood and matched oak. Its economy brings handsome and distinctive wood panels within the budget of many more home owners and industrial builders.

To enhance and protect the printed finish, leading plywood manufacturers use a BUTYRATE topcoat lacquer. This water-white, non-yellowing lacquer is entirely compatible with the graining inks over which it is used. It gives panels a durable protective surface, allowing the end-user to install them without further finishing. And since a BUTYRATE lacquer does not discolor upon aging, shade change of the panels is virtually eliminated.

BUTYRATE lacquers are applied easily, quickly, with conventional spray equipment or high speed roll-coating machines. For rapid conveyor-line operation they may be force-dried in minutes by infrared or convection ovens.

Ask your lacquer supplier about them. If he is not now offering a BUTYRATE topcoat lacquer, ask him to get in touch with us. Our technical staff will be pleased to work with you and your supplier. For more information write to EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

NON-YELLOWING, STAIN RESISTANT

BUTYRATE

TOPCOAT LACQUER

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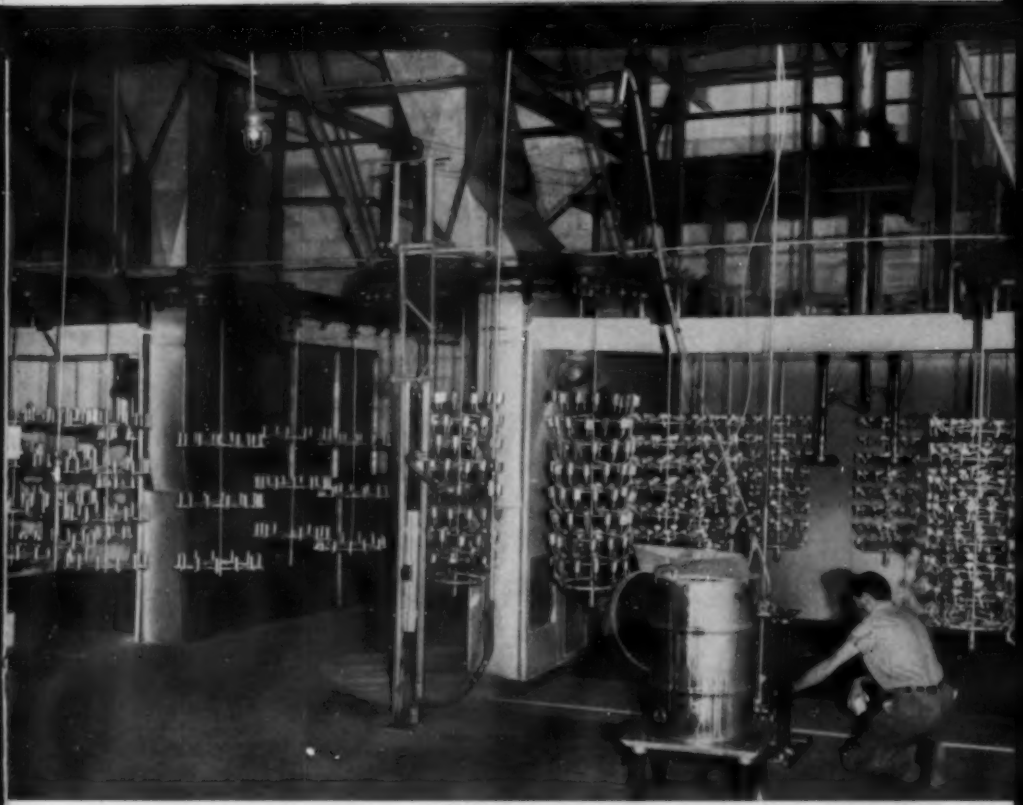
Parts enter electrostatic booth No. 1 at right and leave at left, then pass around loop between booths. Photograph, courtesy of Ionic Electrostatic Corporation.

Custom Finishing Shop *Uses Electrostatic Setup*

By Henry E. Kiernan
Kiernan Engineering Co.

THE FIRST requisite of the custom finishing shop is flexibility and versatility of the finishing system and the equipment, including everything from surface preparation to the final baking. In the case of Battle Creek Finishing Corp.* it is possible to apply either a protective or decorative finish on practically any part of product, re-

*1515 Hart Pl., Brooklyn 24, N. Y.



Latches and door closers enter the A-type convection oven at left where the aluminum base coat and clear protective coats are baked. Products exit at the right.

gardless of its size, weight, shape or the material from which it is made.

However, the company does specialize on the smaller, relatively light weight and sometimes intricately shaped products that can be finished economically in mass production, on a completely automatic finishing system. Some of these products include builders' hardware, such as door closers, locks, door knobs, latches and window hardware made of aluminum and zinc die castings.

Because of the wide variation in size and surface contour, construction of the fixtures or work holders is almost a business in itself. The need for having correctly designed and properly maintained fixtures is sufficient to warrant a separate department for this purpose. For some products, fixtures are made to hold 50 pieces, while for some smaller items the fixtures will hold as many as 300 or more pieces.

Spacing of products on the fixtures, as well as positioning each one just so, must be carefully considered to obtain complete and uniform surface preparation and satisfactory coating coverage by electrostatic application.

The fixture department is not only responsible for designing and

producing the work holders, but its personnel also take care of the maintenance, inspection and the straightening of bent or damaged fixture parts, and the stripping of accumulated coating materials from any exposed fixture areas.

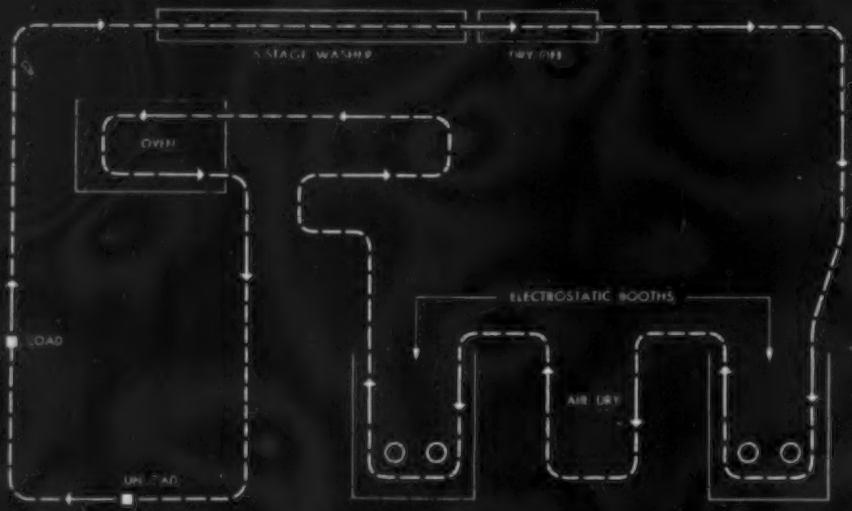
All Parts are Cleaned and Zinc Phosphatized

Insofar as surface preparation is concerned, the big majority of products to be finished have light soil that can be removed by vapor degreasing. However, a few pieces have accumulations of heavier soil that must be removed by other means due to the fact that the surfaces must be cleaned and phosphatized to prepare them for the application of coating material.

Accordingly everything is put through a 5-stage power washer and phosphatizing machine. In the first stage a mild alkali cleaner is sprayed on at a temperature of 120° F.; this is followed by a cold water rinse. In the third stage, a zinc phosphate solution is applied at 100° F.; this is followed by a water rinse at room temperature. In the fifth stage a mild chromic acid solution is sprayed on at 145°.

The temperature of the solution in the last stage of the washer is purposely stepped up to promote faster drying in the dry-off oven. Loaded fixtures revolve as they travel through the dry-off oven for 3½ minutes at 300° F. It has been found that revolving the parts in this oven removes any excess water or cleaning solutions that might accumulate in any low areas; this, then, promotes fast and complete drying regardless of the surface contour of the products.

It would be impractical to describe every kind of finish that is applied by this system. However,



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ChromiCoat is just one of a line of more than 30 Oakite materials designed especially for aluminum. There are etch and non-etch cleaners . . . barrel finishing compounds . . . safe paint strippers . . . forming lubricants.

For more information, ask your local Oakite man or write to Oakite Products, Inc., 20 Rector Street, New York 6, N. Y.

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the basic procedure is the same for all products. For door knobs, latches and door closers, for example, the loaded fixtures are suspended from an overhead chain conveyor which has hooks spaced on 18-in. centers. These products go through the system at a speed of 3-ft. per minute.

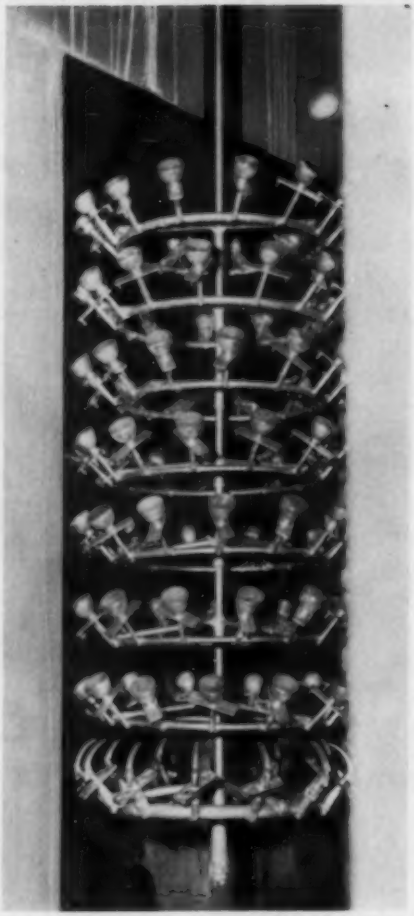
Electrostatic Application of Aluminum and Clear Coat

After leaving the dry-off oven the parts cool as they travel by conveyor for six minutes before entering the first electrostatic booth where twin, ceiling-mounted, 15-in. discs (rotating and reciprocating) apply a synthetic base aluminum coat. The atomized aluminum paint particles are ionized in a static field of 100,000 volts, 0.3 miliamperes.

The racked parts are coated as they enter the booth on the right hand side; they travel back and around a hairpin turn and are again coated as they leave the booth on the left hand side.

Besides the wrap-around feature of electrostatic application, the loaded fixtures are revolved in the static field to insure a complete and adequate coating coverage of finish on all surface areas, regardless of their contour. The aluminum coating is applied at a viscosity of 32 seconds at 78° F., as measured in a No. 1 Zahn cup. The material is constantly agitated in its container to keep the aluminum pigments in complete suspension.

Leaving the first electrostatic booth, the parts travel for eight minutes around a loop between the two booths to allow for a suitable flash-off period before a clear synthetic top coat is applied in the second electrostatic booth.



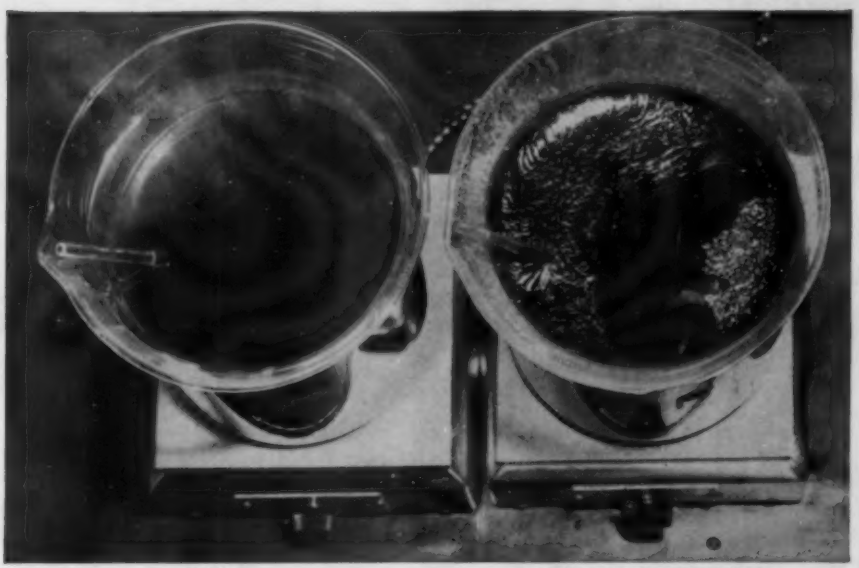
Fixture loaded with door knobs and latches enters the 5-stage power washer and phosphatizing machine.

The clear top coat material is applied by twin, ceiling mounted reciprocating 15-in. discs which rotate at high speed in a static field identical to the first booth. The 50% solids clear material is used

Sick of scum in cleaning tanks?

SWITCH TO WYANDOTTE NUVAT!

From Wyandotte research comes a powerful new heavy-duty vat cleaner that won't form scum. This lab test shows the difference:



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Put NUVAT to the test of performance. You'll find it excellent for either soak or barrel cleaning of steel, copper, brass, nickel, or magnesium. You'll see that it displaces and dissolves soils conventional cleaners won't touch—removes mineral, vegetable, and cutting oils; drawing, buffing, and polishing compounds; grease, shop dirt, and encrusted deposits. And you'll get the same top performance, the same free-rinsing advantages, in water of all degrees of hardness. It's chelated, too. Significant point: NUVAT can actually be followed by electrocleaning without rinsing. Invite your Wyandotte representative to demonstrate the numerous advantages of NUVAT today.

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at a viscosity of 30 seconds at 78° F., measured in a No. 1 Zahn cup.

Twin Discs Can be Used to Apply Multi-Color Coatings

In both electrostatic booths the length of the reciprocating stroke of the twin discs can be adjusted to suit the vertical length of fixtures used to hold the products. Both booths are fully controlled from a single central control panel. The discs are mounted in such a way that each one can be adjusted to regulate the distance beteen the disc and the product to be coated.

The variable speed discs may be separately controlled and fed different types and colors of coating materials to produce multi-color finishes. With this type of equipment the parts actually receive a double wet coat of the finish in each booth because they are coated as they enter the booth and again as they round the U-turn at the back of the booth—and they receive another coat as they leave the booth.

After the parts leave the second electrostatic booth an 8-minute flash-off (air drying) period is allowed before they enter a gas-fired convection oven where both the aluminum base coat and the clear top coat are baked for 15 minutes at 360° F. The parts cool as they travel for 15 minutes to the wrapping and packaging station.

Minnesota Paints, Inc., Names District Manager

Clarence A. Hedlund has been appointed to the post of Northwest District Manager for Minnesota Paints, Inc., Minneapolis, Minnesota.

Hedlund joined Minnesota Paints in 1948 as a salesman. In 1956, he was named District Sales Manager of the Eastern Division of the Northwest District and has held that position until his present appointment. He succeeds Charles B. Rowley who has retired.

Viscometer Receivers

A new 2-color Bulletin No. V-1240 8½ x 11-in. describes Norcross Viscometer Receivers for use with Norcross Viscometer measuring elements. It is offered by Norcross Corp., 247 Newtonville Ave., Newton 58, Mass.

For more data, circle 23 on colored card.

To Distribute Synflex Products

The Synflex Products Division of Samuel Moore & Co., Mantua, Ohio, has appointed the following as authorized master distributors to stock its complete line of Synflex Nylon industrial hoses and polyethylene, vinyl and nylon tubing: N. L. Kuehn Co., 3747 N. Booth St., Milwaukee, Wisc., and Syracuse Supply Co., Syracuse 1, New York.

Book on Trolley Conveyors

What a trolley conveyor can do to reduce manufacturing and handling costs—and how to select the right trolley conveyor for any requirement—these are the two main topics of a new 58-page book, 2730, "Trolley Conveyors," just issued by Link-Belt Co., Dept. PR, Prudential Plaza, Chicago 1, Illinois.

Examples of many installations—from small, relatively simple jobs up to the most complex systems found in some of the most highly complex plants—are shown, with combinations of photographs and layout drawings. The book also shows how trolley conveyors aid in many of the tasks required in modern industry, such as washing, finishing, drying, baking, cooling, assembly, testing and storage.

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Painting Structural Steel On Conveyor Line

AT THE R. C. Mahon Company's Structural Steel Division in Detroit, Mich., huge structural steel assemblies and sub-assemblies are spray painted from above and below as the steel moves along on a large crossbar conveyor.

The conveyorized paint system has cut painting costs in half. Measuring 15-ft. wide and 400-ft. long, this paint conveyor, which includes a Mahon paint spray booth, is the largest in the industry. Two spray painting stations, one above and one below the conveyor, allow the painting of every unit to be completed in one continuous operation.

Previously the large structural assemblies, many weighing up to 50 tons and measuring up to 96-ft. long, were laid flat on the floor of the plant, painted on one side, turned over, and painted on the other side. This procedure required more crane manipulation of cumbersome components, wasted paint and resulted in excessive down-time of painting operations and personnel.

With the new conveyorized painting system, a crane transfers the components from the final fabricating and cleaning operations directly to the paint conveyor. The conveyor moves at the rate of 5-ft. per minute and has a capacity of ¾-ton per linear foot. This results in a theoretical capacity, with very heavy structural members, in excess of 1500 tons per 8-hour shift. For the average work, where the individual pieces are lighter, the new system permits the painting of 200 tons of steel per day in a single shift, as compared to the 50 tons per shift limit of the former facilities.

The paint system conveyor extends

[*Continued on page 34*]

While another operator farther back, sprays from above, this workman sprays structural steel from below while it is moving by crossbar conveyor.

STUART'S MONOTEX ENAMEL SETS OFF THE FAMOUS PARK TOOLBOX

from ALCOA

Park Manufacturing Company, tool and tackle box specialist, believes that new-product gleam should last for years. That's why Park finishes its rugged products with Monotex Aluminum Enamel, made with ALCOA® Pigments by Stuart Paint Co., Chicago. R. E. Fieberts, vice president, says, "Durability, with outstanding appearance, is our reason for using Monotex."

That makes sense. Aluminum polychrome finishes like Monotex resist the extremes of weather, the erosion of time, the mars and scratches of careless handling. Test one today. You'll be pleased with the results.

Alcoa does not make paint, but paint manufacturers, working with ALCOA Aluminum Pigments, have developed a wide range of metallic finishes that give extra protection; build big sales for a variety of products. Get all the facts from your paint manufacturer, or write ALUMINUM COMPANY OF AMERICA, 1757-D Alcoa Building, Pittsburgh 19, Pa.

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With DeVilbiss automatic spray, gun angles, spray patterns, and spraying duration are all precisely set for exact coverage and absolutely uniform results hour after hour on your production line. In many instances, it's even possible to finish both the inside and outside of your product in different colors at the same time, without overlap. DeVilbiss automatic spray guns are available with a wide variety of nozzle combinations for spraying every type of material—from water-thin oils and coatings to abrasives and heavy mastics. Multiple gun arrangements coat products of all sizes and shapes with precision control. Your DeVilbiss representative can show you how automatic spray speeds application, saves paint, cuts finishing costs. Call him. The DeVilbiss Company, Toledo 1, Ohio. Also Barrie, Ontario; London, England; São Paulo, Brazil. Offices in principal cities.

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from the plant interior directly to the shipping area outside of the plant. This arrangement presents an added advantage in the general material handling operations in the Mahon plant. Even where completed structural components are not painted, they still are transferred to the shipping area by means of the paint system conveyor, with minimum handling. With the conveyor in constant motion, finished structures can be placed on it as they are completed.

Combined Dry-off Oven And Cooling Tunnel

A COMBINATION 2-zone dry-off oven and cooling tunnel that has some interesting features was installed over a year ago in the main Plymouth automobile plant at Detroit, Mich. The combined enclosure, with conveyor, is 134-ft. long. It is located adjacent to the wet sanding deck and its function is to dry off all surface moisture from bodies and then cool them sufficiently for masking before painting.

The oven is a 2-zone type; the first zone, 40-ft. in length, is heated by radiant type ceramic heating equipment, arranged in six banks to surround the body contour. This part of the setup produces 7,200,000-Btu. The second oven zone, 60-ft. in length, has gas-fired heating facilities that produce 1,500,000-Btu. Each heating zone is of the recirculating type and contains separate exhaust fans. The cooling zone, 34-ft. in length, has air-moving fans suitably arranged for cooling off the bodies.

Filtered atmospheric air—20,000-cu.ft. per minute—is supplied through high velocity slots at both sides of the enclosure. The air is then exhausted from the roof of the tunnel through adjustable openings by means of one 22,000-cfm. exhaust fan. Even though there is less than 2-ft. of space separating the cooling tunnel from the exit end of the oven, an air balance is maintained because of the air seal on the ovens and the adjustable slots in the cooling tunnel.

A remarkable feature of this installation is the fact that bodies attain a heat of approximately 350° F. and then are cooled to about 95° F., all within seven minutes. The capacity of the combined heating and cooling system is 60 bodies per hour.

This combination 2-zone dry-off and cooling tunnel is 134-ft. long. Photograph, courtesy of Gallagher-Kaiser Corporation.

Metal Finishing Equipment

If you finish any metal product (from ladies's compacts to diesel locomotives) you should carefully examine the 12-page 8½ x 11-in. illustrated catalog A661 by R. C. Mahon Co.

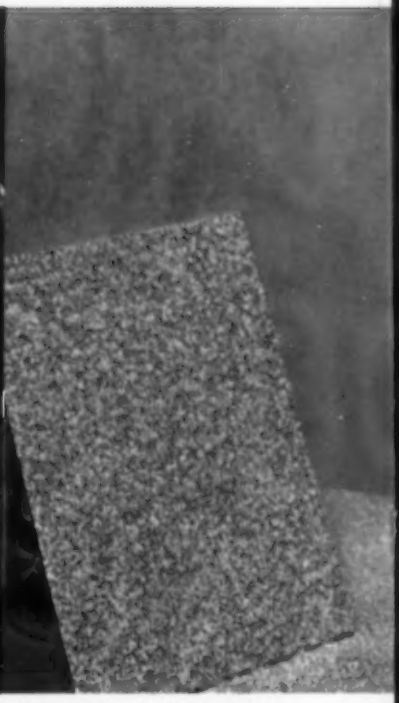
The catalog describes all finishing operations from metal cleaning, surface preparation through spray booths, dip and flow coaters to and including bake ovens. Complete finishing systems, special processing equipment, control components, dust and fume control equipment and engineering services are also presented attractively in two colors.

This is not just a collection of pictures with captions. Each operation with suitable equipment and controls is explained and the most modern facilities are shown. For a copy, write The R. C. Mahon Co., Detroit 34, Mich.

For more data, circle 24 on colored card.

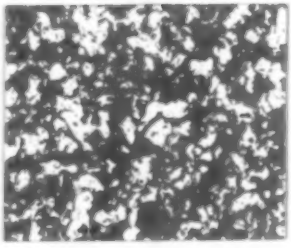
W. V. Dolan, industrial finishes manufacturer, says, "Our chemist insists we use the best chemicals for **SPEX,** so we use USS **TOLUENE."**

W. V. Dolan hands the chemist an order for SPEX. The batch produced must have the exact texture and color combination as previous orders for the customer.



Sample spray test is made on the new batch of SPEX.

This is an actual SPEX sample*. Notice the color combination. It will always be exactly the same—no matter how many times the batch is made. SPEX is quality controlled.



*Color card available from V. J. Dolan Co., 1830 N. Laramie Ave., Chicago 39, Illinois.

Comparison of new sample with samples from previous batches confirms texture and color uniformity.

SPEX multicolor is a lacquer type coating made by V. J. Dolan & Company of Chicago. SPEX may be applied with standard spray equipment and is an ideal finish for furniture, carrying cases, store fixtures, factories and many other applications. No sealer or primer is necessary for wood, masonite and similar surfaces. For metal, Dolan's #50-4425 metal primer is recommended. For brick and masonry, #85-4727 emulsion primer should be used. SPEX is washable. It resists scuffs and scratches and is available in many attractive color combinations.

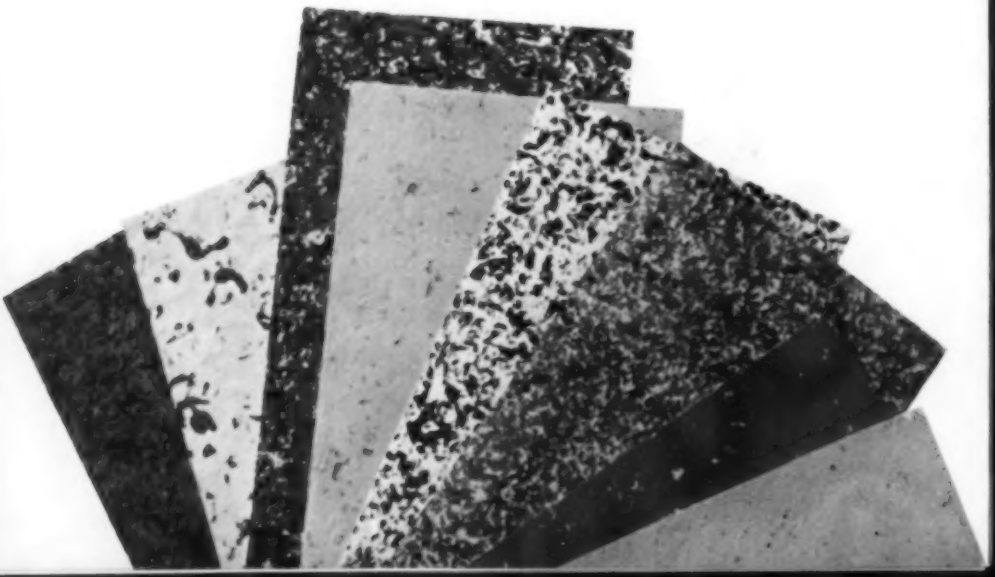
To make SPEX, the Dolan Company specifies USS TOLUENE— a nitration grade toluene. The high quality of USS TOLUENE helps to assure paint uniformity. Any batch of SPEX can be duplicated over and over without the slightest variation in color or consistency. In addition to quality and uniformity, the company has to have fast service. So, they order USS TOLUENE.

USS TRADEMARK

Toluene

the start of a good finish

Nitration grade TOLUENE from United States Steel is the quality material that helps paint manufacturers like V. J. Dolan & Company produce quality paint for your specific need... assures you of quality in your product, too.



Burn-Proof Finish For Tops of Furniture

THERE IS A definite need for a furniture finish that is resistant to cigarette burns as well as to alcohol, nail polish and polish remover, lipstick and various solvents. There are two finishes that meet these requirements, the polyester and epoxy finishes. Without going into the relative merits of either finish, exhaustive tests have proved their toughness and mar-resistance. Results of these tests were revealed at a symposium held last year in Chicago by the National Association of Furniture Manufacturers.

Regardless of the excellent properties of any finish, the coating itself cannot protect the wood against charring if a cigarette is allowed to burn itself out on the surface. However, modern developments have been able to solve this problem.

At this same symposium The Fine Hardwoods Association announced the development of a Finishield process which protects wood against the charring effects of burning cigarettes. Finishield plywood includes, under the face veneer, a sheet of aluminum foil that serves as a heat dissipating layer to quickly transfer the heat away from a lighted cigarette or other hot objects placed on the surface. The under layer of metal foil transfers the heat away at a rate rapid enough to prevent scorching of the wood fibers.

The rate of heat dissipation increases with an increasing thickness of aluminum. A thickness of 2½ mils has been determined as the minimum permissible for use under 1/28-in. veneer, assuming that the face will be sanded before finishing to approximately 1/40-in.

Aluminum foil is available that is coated with a thermosetting adhesive which requires only heat and pressure of the hot press to form the bond. The aluminum foil may also be cold pressed by using conventional cold press adhesives.

The Finishield process has contributed much to the use of wood tops instead of plastic tops on case goods, tables, radio, TV and Hi-Fi cabinets, as well as the tops of office and laboratory furniture. Adequate sales promotion at the retail level should increase the sale of pieces manufactured under this process.—*S. E. N.*

Dr. C. M. Loucks Joins Beck Equipment & Chemical

Mr. Charles M. Loucks, Ph.D., has been appointed consulting chemist by Beck Equipment & Chemical Co., 3350 West 137th Sreet, Cleveland 11, Ohio. Dr. Loucks will specialize in paint remover problems and will assist the Beck Customers with special paint stripper research to meet the challenging requirements of the paint remover finishing industry.

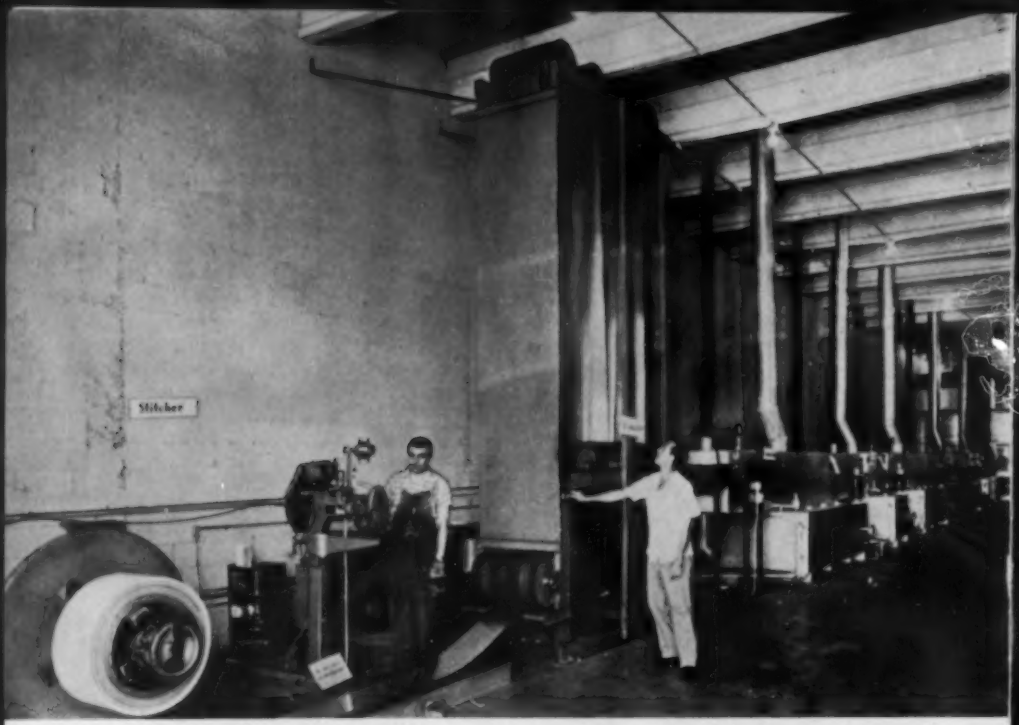
Dr. Loucks was for 17 years with another concern, and prior to that he was Professor of Chemistry at the University of Tulsa.

Charts Coatings To Use For Vacuum Metallizing

"New Developments in Vacuum Metallizing" is the name of a 4-page brochure describing metallizing coatings systems which may be applied by spraying, dipping or flow coating to thermoplastics, thermosetting plastics, metals and glass. Base coats applied before metallizing and top coats and back up coats for use after metallizing, are listed. Thinning information and system properties are also given.

The guide is in chart form and is available from Bee Chemical Co., 2700 E. 170th St., Lansing, Ill.

For more data, circle 25 on colored card.



The start of continuous strip coating line shows unwind station, stitcher, accumulator and surface preparation tanks. Photograph, courtesy of Gasway Corporation.

Cleaning and Painting STEEL & ALUMINUM STRIP

By Nathan Becker, V.P. of Production
SeaView Industries, Inc.

THE TRANSITION of travel by air from travel by car is gaining momentum every day. Recognizing the demands of tomorrow, SeaView Industries, Miami, Fla., has developed a prefabricated steel T hangar for the smaller airports and for the storage of executive planes as well as the planes of private pilots. Other possible uses for the hangars would include storage of farm equipment and for small shops and small warehouses. An allied line of products consists of aluminum awnings, patio covers, boat shelters and carports.

The close alliance of all of these products lies in the fact that both the steel and aluminum strip are coated with baking enamel on both sides before any shearing and forming operations are performed. Another tie-in is that all of the products are used outside where they may be exposed to all sorts of weather, therefore the quality of the finish is of the utmost importance.

At regular intervals test samples are cut from the coated metal strip at the rewind station and sent to a quality control laboratory for testing of dry film thickness, adhesion, hardness, resistance to salt spray, blowing sand, etc.

Steel and Aluminum Strip Coating; Colors; Speeds

Two different standard colors are applied to the sheet metal strip in the 260-ft. continuous strip coating line. The equipment will accommodate metal strip as wide as 20-in. and up to .050-in. thick. The .019-in. strip travels through the system at a speed of 80-ft. per minute, and the .050-in. strip at 38-ft. per minute. Both steel and aluminum strip are finished on the same line. However, due to different surface preparation requirements, the two metals cannot be finished at the same time. Some strip is finished with the same color on both sides, while other strip is coated with a different color on each side.

Steel and aluminum coiled strip is given a colorful bake finish on both sides before being cut and formed to make awnings, roofs for boat and car ports, covers for patios, cabanas, marques, airplane hangers, shops and warehouses.

Power Unwinders; Stitcher; Cleaning; Surface Preparation

The continuous strip coating line includes two power driven unwinders to unwind metal strip from coils, a stitcher to splice the two ends of metal strip to make a continuous strip, and an accumulator. The accumulator consists of a series of stationary mounted and

Compact SeaView T-hangers, of all-steel construction, are available in singles or in multiples.

movable rollers around which the strip travels up and down, so that a reserve supply is accumulated to allow the strip to continue traveling at full speed through the cleaning and coating machines, and still permit the ends to stop long enough (25 to 40 seconds) to be spliced at the stitcher. In other words, it provides a time lag of from 25 to 40 seconds, depending upon travel speed of the strip, for stitching the two ends of metal when the workmen change rolls and must splice the ends of an unwound roll to the beginning of a fully wound roll, without stopping the flow of strip through the cleaning and coating system.

Following the unwinder and accumulator we have five surface preparation tanks. Each tank has a pair of rubber squeegee rolls at its exit to prevent any carry-over of solutions or water rinse to the next tank. After the last tank there is a drying tower 30-ft. high; however, little if any heat is required in the drying tower since the small trace of moisture that remains on the strip is evaporated by air circulation and exhaust fans.

Strip metal, traveling at the rate of 80-ft. per minute, remains in the drying tower about 45 seconds, but strip that travels only 38-ft. per minute dries for 1½ minutes. Taking advantage of plant location, heat is avoided in the drying tower; this removes the need for providing travel time for cooling, and it allows us to shorten the production lines by some 20-ft.

The roller coater (infeed end at left) is located in a clean air conditioned, pressurized room. Paint materials are pumped from containers into the roller coater.

Roller Coater in Clean Room; Keeping Unused Rollers Round

A roller coater is next in line after the drying tower. It is located in an air conditioned room with openings only large enough for the strip to enter and leave. This room is pressurized to keep it clean and free of all dust. Both the roller coater and the floor are kept scrupulously clean because we know that a clear, high-quality finish is impossible where flying dust and dirty conditions exist.

An important factor in successful roller coating is the proper care and treatment of the composition rubber and gelatin rollers. When it is necessary we turn down and refinish worn rollers on a special lathe to produce a perfectly smooth, round roller surface. To keep these cylindrical rollers perfectly true and balanced we mount the rollers, not in use, in a machine that rotates them intermittently.

The machine is fitted with a device that causes the idle rollers to rotate for four minutes; the rollers then stop moving for ten minutes, then they revolve again for

FOR BETTER FINISHES... CUT PAINT COSTS PER UNIT NOT PER GALLON

A One-Coat Air-Dry Enamel Endures Rough Service on Allen Storage Racks

Pallet storage racks face a daily barrage of scrapes and scuffs that is hard on any finish. Allen Iron and Steel Company, Norristown, Pa., combats this problem with a fast air-drying Cosden enamel applied in a single coat right to the bare steel. No priming or baking is necessary and the material is versatile enough to be either sprayed or dipped as required.

An Allen executive says: "Ease of application, prompt drying, plus an extremely durable product are most important for our production and handling methods." Our formulating experience met these requirements and added economy, too! It can do the same for your finishing requirements. Write or call us today!

COSDEN PAINT COMPANY

BEVERLY NEW JERSEY

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When composition rubber and gelatin rollers are not in service they are placed in this machine where they are rotated intermittently to prevent them from getting "out of round."

four minutes. This cycle continues for 24 hours a day, seven days a week. It prevents any sagging of the surface in either the rubber or gelatin rollers. As a result, the rollers stay perfectly round. We have found that these extra precautions in cleanliness and in keeping the rollers perfectly round pays off in successful, trouble-free roller coating.

Bake Oven Has Eight Zones; 210° to 460° Heat

Within 30 seconds (flash-off time) after the coated strip leaves the roller coater it enters an 8-zone, indirect gas-fired convection oven which has a hydraulic guide to keep the strip centered as it goes through the oven. Metal strip that travels at 80-ft. per minute is in the oven heat for only one minute; strip moving at the rate of 38-ft. per minute is in the oven two minutes. The zone temperatures in the oven range from 210° to 460° F.

Within a few feet after the coated strip leaves the oven it passes under a cold water spray cooling unit which has double rubber squeegee rolls at the exit to remove moisture from the coated strip. The coated strip continues on to one of three power-driven rewinding units. No accumulator is required at the rewind end of the continuous strip coating line.

Processing, Coating, and Baking The Coating on Strip Steel

For the SeaView T hangar, steel strip, galvanized on both sides, is fed into the continuous strip coating system. For surface preparation it passes through a surface etchant in No. 1 tank at 160° F. This is followed by immersion in a hot water rinse at 160° F. in tank No. 2 and an iron phosphate solu-

NEW RediRay® MODULAR INFRA RED OVENS

FIT ANY FINISHING SYSTEM

Features:

Uniform Heat . . . no hot spots; ceramic face emits even heat.

High Efficiency . . . no bulbs, tubes or reflectors to get dirty.

Low Maintenance . . . no bulbs or tubes to burn out or break.

Complete Flexibility . . . adaptable to any conveyor or system.

Now you can get infra red ovens tailored to suit your *special* finishing system at *standard* prices. In addition, RediRay's uniform, no-hot-spot heating . . . high efficiency . . . and low maintenance puts the profit dollars into *your* pocket. Free your finishing operation from costly, inefficient "fixed dimension" heating. Write us about your heating requirements. See how RediRay can save *you* money, too.

Free! **Your copy of Engineering Data Sheet No. 112 describing RediRay and its applications.**

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INFRA RED SYSTEMS INC. 240 Route 23, Riverdale, N. J.

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tion at 150° F. in tank No. 3. Next the steel strip passes through a room temperature water rinse in tank No. 4 and a mild chromic acid solution at 130° F. in tank No. 5. Then it travels through the drying tower.

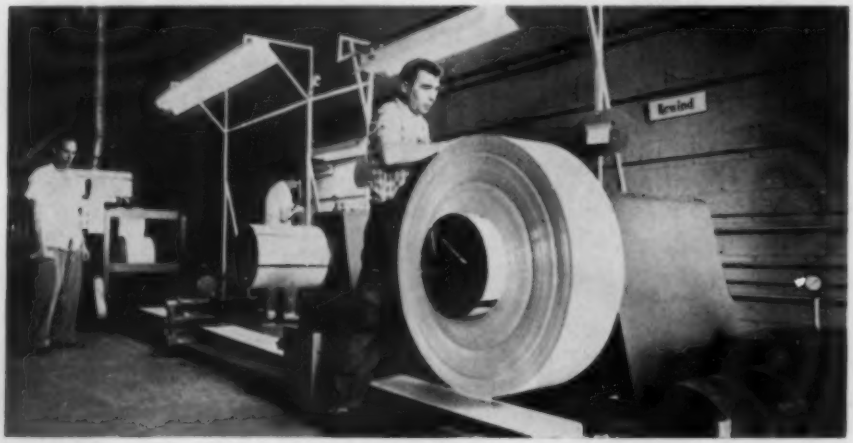
The roller coater applies an alkyd-resin-base prime coat to two sides of the strip. The viscosity of the primer is carefully controlled; it measures 18 seconds at 80° F. when checked with a No. 4 Zahn cup. After a flash-off period of 30 seconds the prime coat is baked in a zoned oven; then it is cooled and recoiled. The dry film thickness of the prime coat is 0.5 mil on top and 0.3 mil on the bottom.

The prime coated strip coils are returned to the unwinding station to go through the system again for the application of the enamel coat. Obviously the strip goes directly to the roller coater, omitting all surface preparation tanks and the drying tower. The primed steel strip receives a coat of white alkyd-resin-base enamel which is rolled on both sides. It is used at a viscosity of 30 seconds at 80° F., as measured in a No. 4 Zahn cup. After baking in the zone oven and cooling, the coated steel strip is rewound. The dry film thickness of the finish coat is 1.1-mils on the top side and 0.9-mil on the bottom-side.

Processing Aluminum Strip

Aluminum strip for awnings, patios, boat and carports enters the continuous strip coating line and receives the following surface preparation. In tank No. 1 it is immersed in an aluminum etchant solution at 160° F. This is followed by a hot water rinse in the second tank at 120° F. In the third tank the strip aluminum passes through an Alodine treatment solution at

This is the rewind station where three power driven rewinding units recoil coated strip. The bake oven is at extreme left. The third rewind unit is at right, not shown in picture.



ASK THE MAN WHO USES NORDSON AIRLESS

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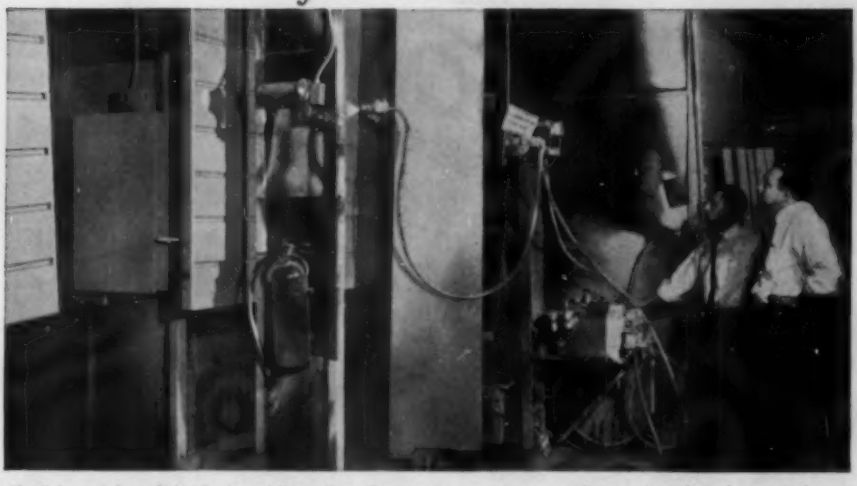
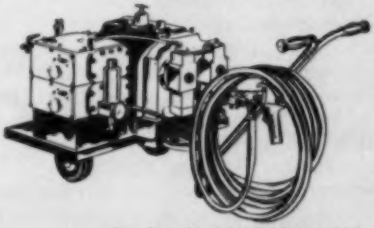


Mr. Briggs, left and Mr. Gering of Berry Door Corporation watch automatic spraying of steel garage doors

"Paint costs were getting out of hand. The sales department wanted a better finish on our metal garage doors, but we were also under pressure to hold the line, costwise. After a careful investigation we switched to the Nordson Hot Airless Spray System. We effected 45 percent savings in paint and at the same time increased coverage very substantially and improved appearance. Total savings are now running better than $4,000 a month.

This is a direct report from Mr. C. T. Briggs, Chief Engineer, and Mr. L. N. Gering, Production Manager of the Berry Door Corporation, Birmingham, Michigan, world's largest manufacturer of metal garage doors.

If you spray varnishes, paints, lacquers or other industrial coatings, it will pay you to find out if the Nordson System can provide savings and improve quality for you. Write Nordson Corporation, 55 Jackson Street, Amherst, Ohio.



Nordson Model 15000 Hot Airless Spray Unit is the most versatile "paint shop" developed for American industry.

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room temperature, followed by a cold water rinse. In the last tank it passes through a mild chromic acid solution at 130° F.; then through the drying tower, and into the roller coater.

A vinyl material, at a viscosity of 28 to 30 seconds (depending on the color) at 80° F., as measured in a No. 4 Zahn cup, is rolled on the top, and an alkyd-resin-base enamel of equal viscosity is rolled on the bottom side. This coating operation produces a dry film thickness of 1.1-mils on the top side and 0.9-mil on the bottomside.

Coils of coated steel and aluminum strip are then transferred to the manufacturing department for shearing, forming and fabricating operations.

Today's Color Trends

TODAY'S COLOR TRENDS seem to point to the depth and richness of the Old World fabrics, with definite emphasis on richness of color tone. Fabric colors this past fall expressed a sense of wealth and stability—in the royal blues, the ruby reds, the lush plum shades, the velvety greens and deep earth browns.

It may be of interest to you to know that all designers and color consultants watch very closely the direction of fabric manufacturers, for it is with them that fashion is established and trends begin. Right now, we seem to be going through one of the most creative cycles of color acceptance, for true quality of color is being presented. And so it will be that the consumer will become more color-educated, more discerning and more demanding.

Manufacturers of products will have to supply that demand and it behooves them to be ready for this challenge. You can make or break a product by poor sensitivity to color, so it is important to give real thought and judgment to your selection of a color for every product you manufacture. The battle for new products, materials, processes and finishes is on as each company strives to find the key to open the doors to greater sales.—*Ceramic Forum.*

Erwin Bachrach Joins J. O. Ross Engineering

Erwin Bachrach has joined the sales engineering department of J. O. Ross Engineering Division of The Midland-Ross Corp. He will specialize in paint finishing and special drying systems and will be in the Mt. Prospect, Ill., office of Ross.

N. I. Gaynes, New Sec. of A.S.T.M.

Norman I. Gaynes, 48 Whitney Drive, Berkeley Heights, N. J., International Consultant & Technical Director of Titanine, Inc., Union, N. J., has been named Secretary of the American Society of Testing Materials, D-1 Subcommittee XXV, succeeding R. P. Hirt of Hercules Powder Co.

Subcommittee XXV develops new ASTM standards and methods, which are used throughout the world in evaluating and testing all lacquer products.

Mr. Gaynes, a recognized authority on metal finishing whose papers have been published in all leading trade journals concerned with industrial finishing, will add his experience to Subcommittee XXV in coordinating the work and test results of the cooperating laboratories and groups connected with the various phases of lacquer specification development.

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No matter what your product, process or problem, Glidden finishes plus Glidden Technical Service can provide the answer.

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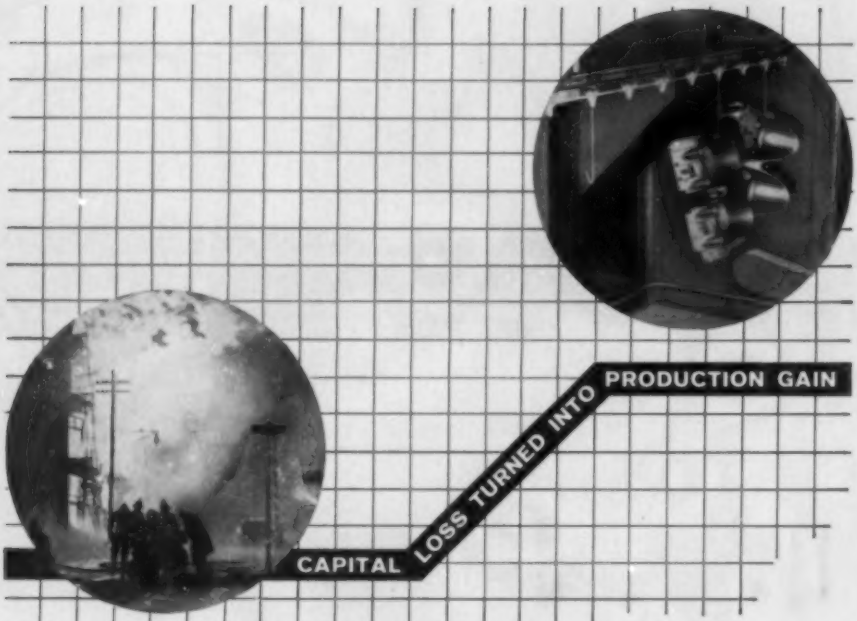


from plant ruins to production records in sixty days

One of the toughest rebuilding problems confronting the Clements Mfg. Co. when their Deckerville, Mich., plant was completely demolished by fire, was speedy replacement of the finishing system needed for phosphate coating and painting of its diversified line of automotive diecast and sheetmetal parts.

The new system had to be versatile—had to handle many different sizes and shapes. It had to be inexpensive to operate fuel-wise and labor-wise. Above all, it had to be delivered and installed in a matter of a few days—it had to do a high quality job right from the start—and it had to take up little floor space.

Experienced MOCO design and process engineers rose to the challenge.

First, a 3 stage washing machine for phosphating and rinsing was designed and built at the MOCO plant, and shipped completely finished, except for piping hook-up, directly to the Clements Mfg. Co. plant.

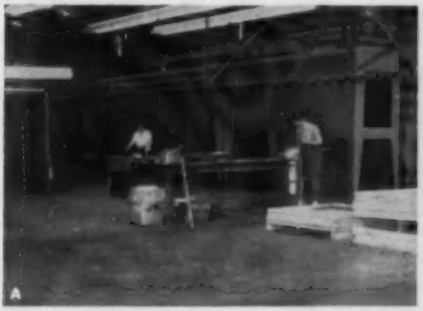
Next, MOCO engineers tackled the drying and paint baking problem. A combination Dry-off and Bake Oven was developed that could dry parts as they came from the washing machine on their way to the spray booths, and bake the painted parts as the conveyor returned them to the oven for a longer period before delivery to the conveyor unloading station.

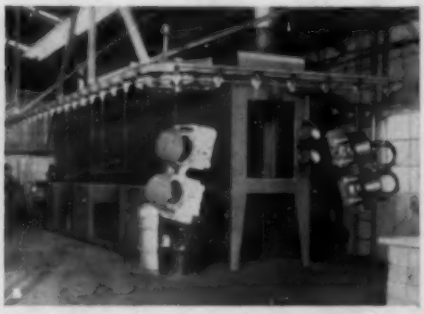
The Dry-off and Bake Oven was too large to ship already assembled, but MOCO's unitized design made assembly at the Clements Mfg. Co. plant a relatively simple matter.

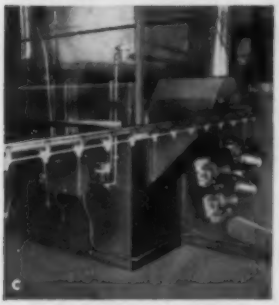
Within 60 days of the disaster, the Clements Manufacturing Company plant was back in full operation with production at a higher level than ever before, thanks to MOCO ingenuity, engineering skill and desire to serve its customers. MOCO problem-solvers will welcome the opportunity to serve you.

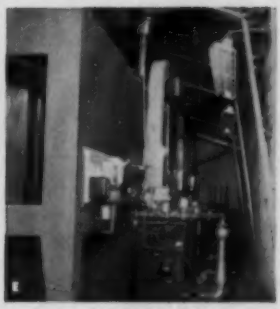
Write for the name of our representative nearest you.

FREE—Send for your MOCO bulletin showing typical finishing system applications and specifications; no cost or obligation, of course.









A—Sixty days after the Clements Mfg. Co. plant was burned to the ground this finishing system was in operation in the rebuilt plant. In the right foreground workers are loading and unloading parts. Behind them is the MOCO Washing Machine. On the left, paint spray booths hide the MOCO combination dry-off and paint baking oven. B—Start of the completely conveyorized finishing cycle. From loading station at left parts enter MOCO 3 stage washing machine for washing, rinsing and phosphate coating. C—Finishing parts coming out of combination dry-off and bake oven on their way to unloading station. D—Entrance view of phosphating machine indicating risers, nozzles, street ells, drain decks, access walkways, spray zone silhouettes shown immediately after pump stopped. E—3 stage MOCO washing machine showing tanks, fill and overflow pipes and valves, pumps, burners, controls and exhaust ducts.

60-A

MICHIGAN OVEN COMPANY

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SPRAY BOOTHS • FLO-COATERS • FINISHING OVENS • CONVEYORS

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The Technique of Setting SPRAYING PRESSURES

By William Brooks
Binks Manufacturing Co.

In the spraying of any coating material with compressed air it is very important, in both manual and automatic spraying, to have the material pressure and air pressure set correctly to get satisfactory painting results — a uniformly smooth surface with little overspray.

MANY well-written articles have been published about the problem of setting pressures for spray painting. Unfortunately, most of these have dealt with low pressure spraying, with the tacit implication that low pressures are the final answer to the problem of getting a good finish.

This is not strictly true, as any experienced spray painter knows. The trick is to set and maintain the proper pressure, whatever it may be, to suit the particular product being painted, the material being used, and the conditions under which the painting is being done.

In addition, many spray painters attempt to prevent or reduce overspray by merely turning down the air pressure. Pressure reductions alone will not reduce overspray. In fact too much emphasis on low pressures might reduce the quality of the finish in other respects.

Use Standard Spray Equipment For 90% of Industrial Finishes

In most cases the application of standard industrial finishes, such as enamels, lacquers, primers, wrinkle and hammer finishes, etc., does not require special equipment. Neither are special nozzles required to apply these finishes which comprise 90% of the industrial finishes on the market today. Most of these finishes can be applied with a good serviceable spray gun, using a standard pressure nozzle combination (fluid nozzle and air nozzle). A standard fluid nozzle that has a .046-in. orifice can deliver more than enough paint to satisfy any production painting system. The type of standard air nozzle I have in mind is capable of atomizing up to a quart of paint per minute and will maintain an even fan pattern within a wide pressure range.

Before proper spraying pressures can be set it is necessary that the gun itself is correctly adjusted. To

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The increasing variety of products turned out by modern industry calls for an extraordinary array of suitable finishes. Randolph—specialist in the production of **exactly-right industrial coatings**—has risen to the challenge. Expert technicians, intensive research and unexcelled know-how are the key factors behind the wide variety of excellent Randolph finishes meeting every need of industry today.

Solving industry's finishing problems is a **Randolph service.** Do you have one? Let us help you with it. You won't be obligated in any way.

Fast delivery is another Randolph service you can depend on.

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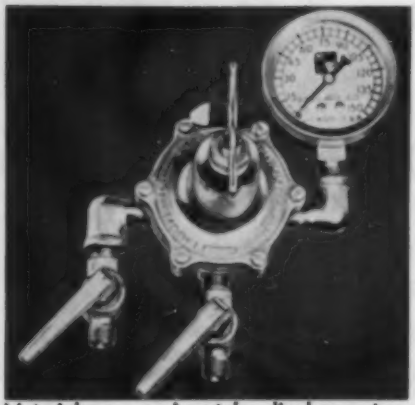


Material pressure is set by diaphragm type regulator. Dial reading will give an approximate indication of the pressure needed for spraying, but it should be used with a visual check too.

do this, you first make sure that all of the gun controls are wide open. This includes the fan or side port control, and the needle valve control. It's well to keep in mind that if it is necessary to close the needle valve to control paint volume, the pressure is either too high or the fluid nozzle being used is too large. The needle valve control is used primarily with a siphon cup, where there is no other way to control paint volume.

With the gun controls wide open, begin setting the pressures by following these steps:

1) Make sure that the air and fluid gauges are at zero. Connect the gun to the air and fluid hoses, and remove the atomizing nozzle.

2) With the trigger of the gun pulled all the way back, start turning up the fluid pressure until a stream of paint shoots out of the gun for about 3-ft. parallel to the floor, before it starts to arc down. This is a check to see that the gun is delivering enough volume; it has nothing to do with air pressure.

3) Replace the air nozzle and set the atomizing air pressure at approximately 15-lbs. per square in. This is just a reference pressure; it is not enough to atomize the amount of material being delivered by the gun. Starting from this point, raise the pressure 5-psi. at a time, each time spraying a sample pattern on a flat surface where it can be visually checked. The first few patterns will be oval shaped, with under-atomized paint particles along the outside of the pattern.

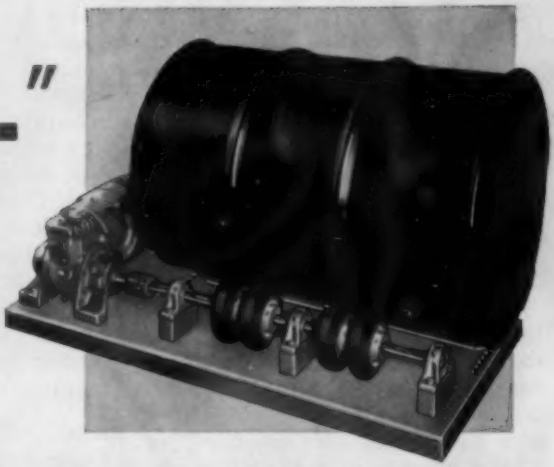
Continue raising the pressure at 5-psi. increasements and check the spray pattern each time. When you obtain a full even fan pattern, with evenly-spaced identically-sized particles along the edges, you have reached the lowest operating pres-

With atomizing air hose disconnected and material hose connected, squeeze the gun trigger and visually check the material discharge.

Mix materials "RIGHT IN THE DRUM"

with

"U.S." DRUM ROLLERS



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"U.S." Drum Roller units are compact, rugged, powerful. Eight heavy-duty ball-bearing wheels provide *smooth* rolling. Solid welded steel bases take the gaff of heavy-duty service and assure long trouble-free life. Constant speed, or variable speed drives, plus a range of sizes, meet your capacity requirements up to 1,000 lbs. per drum. Totally enclosed, explosion-proof and air-driven motors are available optional. Write today for Bulletin DM-290 containing details on the full "U.S." drum roller line.

PROCESS EQUIPMENT DIVISION

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408-G

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sure range for the spray gun on hand, with the particular paint material you are using.

The air gauge pressure at this stage may vary widely from one gun to another; it may be as low as 20-psi. or as high as 100-psi. The exact figure at this time is not important, nor does it mean that the pressure at the nozzle is the same as gauge pressure.

Adjust Pressures to the Surfaces to Be Coated

4) The next problem is to adjust these pressures to the surface to be coated. If it is a large, flat surface, you may have the proper pressures already. Check the spray pattern on a sample piece of stock to see if it conforms to the pattern described in step No. 3.

On the other hand, if the object is small and has intricate surfaces or contours you may perhaps need more air pressure. The reason for this is that in spraying it is impossible to avoid hitting previously coated surfaces again and again in order to coat the more inaccessible areas of an object. Without a little more air pressure, runs and sags will occur.

Then too, if many different shapes are to be coated on one production run, it is best to set the material and air pressures to coat the most difficult parts, so that you can spray continually without stopping to make gun adjustments for each shape.

5) The next step is to adjust the pressures to the speed of production. The general rule to follow here is to use lower pressures on a slow moving production line, and higher pressures where parts are coming through the booth at a more rapid rate.

Also, Adjust Pressures to Your Speed of Production

In adjusting spraying pressures to the speed of production, first be sure that the object to be painted is positioned or hung from the conveyor in such a manner that the sprayer can coat it with the least movement and effort on his part.

6) Where more than one color is being used with one gun, such as in a multiple color circulating sys-

Close-up of material pressure test shows a spray gun with material pressure set properly at starting point. Material discharge stream is almost horizontal for a distance of three feet.

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2. As durable and burn-proof as plastic laminate, and at lower cost.
3. POLYMAC can be sprayed or curtain-coated and is print free in 50 minutes.
4. Can be rubbed to mirror-gloss, semi-gloss or dull sheen and has glass-like hardness.
5. Recommended for —
   Table tops — Case goods
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   Any surface subject to severe usage.

POLYMAC has been tested by an independent laboratory and approved by the Fine Hardwoods Association of Chicago, Illinois, for use with the Finishield Process.

Complete information and data on POLYMAC will be sent on request.

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The Lawrence-McFadden Co.

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tem, the spraying pressures should be adjusted for the most difficult color. Use this color when going through the steps just described.

With both air and material hose connected, spray test panels or sheets for best spray pattern. Most equipment will provide patterns that range from fan shape to round, with all intermediate patterns.

Colors that are relatively difficult to handle usually require a slightly higher atomizing pressure to give the operator enough flexibility in applying them. It's better, in such a case, to spray all colors at this higher pressure than to change the pressure for each color.

Making Adjustments for Automatic Spraying

The setting of automatic spray guns can be accomplished by following the same basic steps just outlined in this article. The only departure from the hand spray method would be to set the fluid flow in a more scientific manner. An automatic system is used to obtain uniformity of finish so we must use some care and skill to see that the fluid flow is correct.

Because most automatic painting systems use more than one spray gun, it is impossible to use the 3-ft. stream method. The only practical way is to check the fluid delivery by ounces or cc's (cubic centimeters) per minute into a graduate.

To obtain actual volume for each gun, all guns must be feeding material at the time you check each individual gun. It is possible to place a graduate under each gun and obtain all readings simultaneously. Never rely on gauge readings to obtain uniform pressures. There are too many variables to throw off the actual fluid delivery. Individual fluid regulators, the best method, will allow individual pressure control without necessitating gun adjustments.

If a paint manifold is used from a single fluid pressure regulator, then each gun will have to be adjusted by using the needle valve control screw on the back of the gun. Set the gun that will require the most pressure or volume first, and then adjust the other guns by turning in the needle valve control screws and by adjusting the atomizing pressure. It's a good idea to run periodic checks on the pressures to be sure of proper finishes.

Any one really interested in setting up controlled paint standards can do it. A beautifully finished product that will satisfy your customers and cost-conscious management is ample reward for the work involved.

Foil inks are made in any color or shade desired to provide variety.

NEW

RANSBURG MOVING BELLS

increase paint mileage . . . improve quality on

KELVINATOR REFRIGERATORS

Ransburg's No. 2 Process moving bells —latest innovation in electrostatic painting—automatically paint mixed sizes of refrigerator cabinets and doors on Kelvinator's new finishing line.

On this job—first of its kind—limit switches re-position the reciprocating bells to accommodate various model sizes mixed on the same line. And, electric eyes selectively trigger the paint on and off between parts.

RESULTS? Automatic electrostatic spray painting—which replaced a battery of reciprocating automatic air guns —is providing Kelvinator with a beautiful, higher quality, and more uniform finish. Rejects, formerly a troublesome problem, have been practically eliminated. And, along with appreciable labor savings in this highly automated set-up, paint mileage is substantially improved . . . even bettering the savings indicated in pre-installation lab tests at Ransburg.

Like Kelvinator, other manufacturers of quality products will find Ransburg's moving bells the automation answer for production lines where batching of similar parts is impractical.

RANSBURG

NO REASON WHY YOU CAN'T DO IT, TOO!

Want to know how Ransburg No. 2 Process can improve the quality of YOUR painted products—and at the same time—cut YOUR paint and labor costs? Write for our No. 2 Process brochure. Or, if your production doesn't justify automatic painting, let us tell you about the No. 2 Process Electrostatic Hand Gun which can be used in either conveyorized, or non-conveyorized painting.

RANSBURG Electro-Coating Corp.

Box 23122, Indianapolis 23, Indiana

For more data, circle 174 on colored card.

tem, the spraying pressures should be adjusted for the most difficult color. Use this color when going through the steps just described.

With both air and material hose connected, spray test panels or sheets for best spray pattern. Most equipment will provide patterns that range from fan shape to round, with all intermediate patterns.

Colors that are relatively difficult to handle usually require a slightly higher atomizing pressure to give the operator enough flexibility in applying them. It's better, in such a case, to spray all colors at this higher pressure than to change the pressure for each color.

Making Adjustments for Automatic Spraying

The setting of automatic spray guns can be accomplished by following the same basic steps just outlined in this article. The only departure from the hand spray method would be to set the fluid flow in a more scientific manner. An automatic system is used to obtain uniformity of finish so we must use some care and skill to see that the fluid flow is correct.

Because most automatic painting systems use more than one spray gun, it is impossible to use the 3-ft. stream method. The only practical way is to check the fluid delivery by ounces or cc's (cubic centimeters) per minute into a graduate.

To obtain actual volume for each gun, all guns must be feeding material at the time you check each individual gun. It is possible to place a graduate under each gun and obtain all readings simultaneously. Never rely on gauge readings to obtain uniform pressures. There are too many variables to throw off the actual fluid delivery. Individual fluid regulators, the best method, will allow individual pressure control without necessitating gun adjustments.

If a paint manifold is used from a single fluid pressure regulator, then each gun will have to be adjusted by using the needle valve control screw on the back of the gun. Set the gun that will require the most pressure or volume first, and then adjust the other guns by turning in the needle valve control screws and by adjusting the atomizing pressure. It's a good idea to run periodic checks on the pressures to be sure of proper finishes.

Any one really interested in setting up controlled paint standards can do it. A beautifully finished product that will satisfy your customers and cost-conscious management is ample reward for the work involved.

Foil inks are made in any color or shade desired to provide variety.

NEW

RANSBURG MOVING BELLS

increase paint mileage . . . improve quality on

KELVINATOR REFRIGERATORS

Ransburg's No. 2 Process moving bells —latest innovation in electrostatic painting—automatically paint mixed sizes of refrigerator cabinets and doors on Kelvinator's new finishing line.

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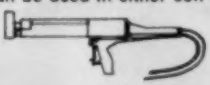

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Painting Metal Furniture AT LOWER COST

HAMPDEN Specialty Products Corp., Easthampton, Mass., manufactures fine folding furniture. Founded in 1910, the company brings 50 years of continuous manufacturing knowledge and experience to the production of its products, the best known of which are Hampden folding chairs, tubular and channel types.

Hampden has the capacity for turning out over 20,000 folding chairs a day in two shifts. Their public seating customers include schools, churches, hospitals, clubs, lodges, ships, governmental agencies, and even Churchill Downs Race Track, Louisville, Kentucky. Hampden's other products include bridge tables and chairs, juvenile chairs and tables, and a line of outdoor casual furniture.

To maintain its position in the forefront of the industry, Hampden constantly introduces new and improved concepts in styling, production and construction methods.

Prior to painting, folding chairs go through a 3-stage cleaning process. Chairs are in folded position and are hung parallel to the conveyor.

Former Painting Methods; Bottleneck in Production

Sam D. Lockshin, vice president in charge of manufacturing, points out that the company has run the gamut in finishing procedures. During an 8-year transition period, they went from hand dipping to automatic dipping, to flow-coating, to hand spray, and then to electrostatic with hand touch-up, and finally to automatic electrostatic spray painting. They have three automatic electrostatic lines in operation today—two mass production lines, primarily for chairs and tables, in the second floor finishing department; and one miscellaneous line on the floor above for short runs of various components.

According to Mr. Lockshin, "We were getting 18 to 20 chairs per gallon of paint by hand air spray, and the finishing department was

Operations here include 3-stage cleaning - phosphatizing, dry-off, electrostatic painting with supplemental automatic spray, and oven baking. A substantial saving in paint and labor was made as a result of using present methods and equipment.

One "side" of each chair is uniformly coated as the conveyor makes a loop around the first ceiling-mounted No. 2 Process reciprocating disc. The conveyor makes an S-loop before the work enters a second electrostatic station, where the other side is painted.

a constant bottleneck in chair production. During the peak period, we were using four booths and three hand sprayers per booth per 8-hour shift. Then we went to electrostatic with two No. 2 Process reciprocating discs and some hand air touch-up. With that step, we increased the paint mileage to 50 chairs per gallon of paint.

Present Setup; 100 Chairs Per Gallon of Paint

"Constantly striving for additional improvement, we succeeded in eliminating the hand touch-up by adding two No. 2 Process bell atomizers. These are used in conjunction with five auxiliary air guns which are automatically triggered to coat the shielded and recessed areas. Now, we get almost total paint utilization, doubling the paint mileage to 100 chairs per gallon. In addition, this change has permitted us to increase the conveyor speed from 13-fpm to 22-fpm. We used to get 3200 chairs per day on one line; now, we get over 5000 per shift per line on two lines.

"The work to be painted first goes through a 3-stage washer—phosphatized cleanser, rinse and chromic rinse—then into a gas dry-off oven. After a 7-minute cooling cycle, the work moves into the first of two No. 2 Process painting stations. Through the cleaning process, the chairs are completely folded and hang in a cocked position for drainage. Just before entering the first painting area, the chairs are opened about half way and repositioned on the line for better electrostatic deposition.

Hard-to-Reach Areas Also Painted Electrostatically

"The conveyor makes a loop around the ceiling-mounted reciprocating disc, which paints one side of the chair. The conveyor then makes an S-loop, and the opposite side of the work is painted in an

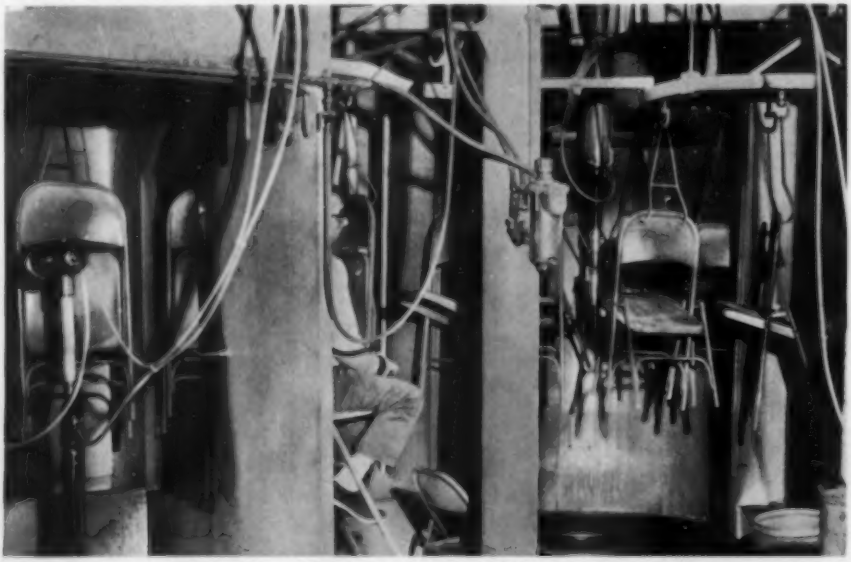
After dry-off, chairs are half opened and re-positioned on the line before entering first electrostatic spray painting area.

identical enclosure with a second reciprocating disc. The chairs are folded after leaving this station.

"The work then moves along into a water-wash booth. Here the first No. 2 Process bell atomizer coats the front of the chair. Three electrostatic air guns hit the hard-to-get-to areas of the chair seat and back. The work is then indexed automatically, and the back of the chair is painted with two electrostatic air guns and another 6-in. bell atomizer.

"After painting, the work enters a gas-fired oven where the conveyor makes a loop, and the chairs bake out for eight minutes at from 325° to 350° F.

"Actually, ours is a completely automatic electrostatic finishing



Upon leaving the second disc station, chairs are folded before entering the booth at left. This completely automated painting setup accounts for a 33% savings in finishing costs over previous methods used in this plant.

IN, ON, OVER, UNDER, AROUND— FOSTORIA OVENS BAKE FINISHES FAST REGARDLESS OF PRODUCT SHAPE

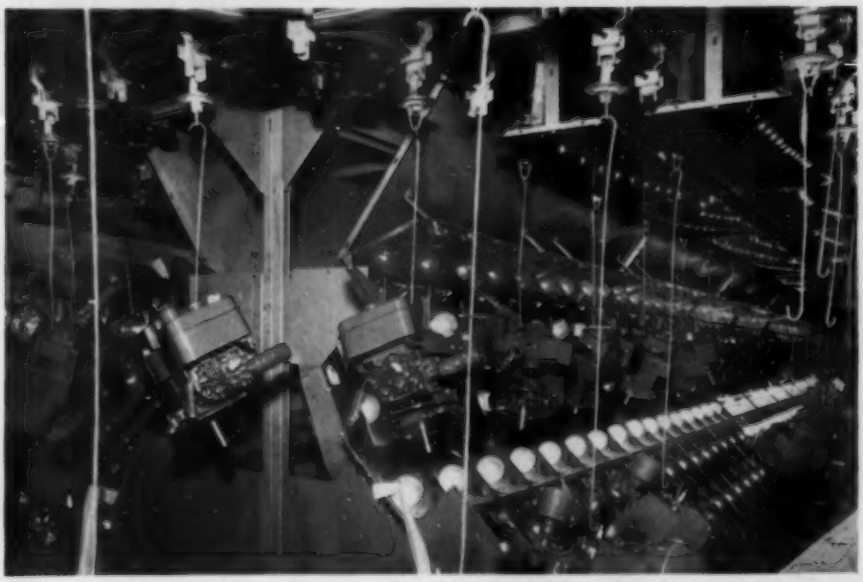
Irregular product contours and varying metal thicknesses make it tough to properly bake enamel finishes uniformly. Runs, soft spots, thin spots and over baking are commonplace, resulting in poor appearance and customer dissatisfaction. But Clinton Engines Corporation of Maquoketa, Iowa and Clinton, Mich. have solved the problem with the pictured installation of Fostoria Infrared Drying Ovens.

Because Fostoria Infrared ovens are designed to direct heat to **all** surfaces evenly and quickly, Clinton engineers find 50% fewer rejects due to improper finishing. In addition, they have cut drying time by 50%. They are saving 15% on paint material costs.

As though this weren't enough, they are finding equally successful results on such diversely shaped products as engines, chain saws and outboard motors.

Damage, due to production line stoppage, has been practically eliminated because, in contrast to hot air equipment, infrared heat peaks and shuts off almost instantly.

Write today, giving a brief description of your type of manufacturing and we'll send pertinent information as to how Infrared can benefit you.



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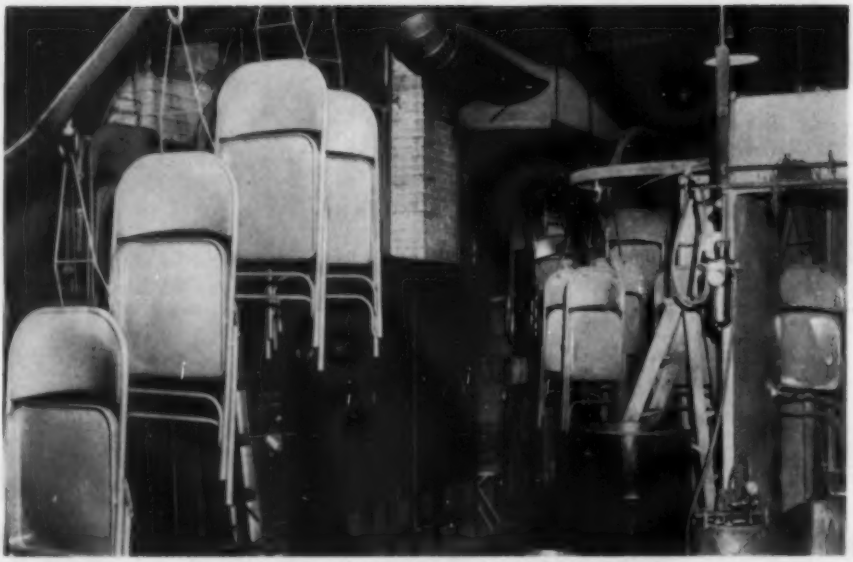

Chairs leave the final painting station at the right and enter the gas-fired oven. Chairs at the left have been through the baking oven and are on the way to shipping.

line," Mr. Lockshin said. "By eliminating hand touch-up, production was increased; the quality of work was improved, and we get an overall 33% saving in finishing costs over previous methods.

"Our booth maintenance costs were slashed," Mr. Lockshin said. "Formerly, we did clean up on weekends, on overtime, at a cost of approximately $130 per booth per week. Now it costs us approximately $30 a week per booth."

Favorable Experience With Other Metal Furniture

Mr. Lockshin pointed out other savings, too. "For instance, there's the garden table, a 42-inch circular piece with tubular legs. It used to take two men to handle these parts when they were hand sprayed. At that time, 200 units per day was about full capacity for a hand sprayer and helper. And, we were painting 8 or 9 tops per gallon of paint. Now, with the No. 2 Process, we can turn out 1400 parts per day, and we get 20 tables per gallon of paint.

"When we were hand spraying the bridge table, one operator painted 400 units a day, and we averaged about 12 tables per gallon of paint. Now, with electrostatic, we're getting 150 per hour, and instead of the 12 per gallon of paint, we now get 100 tables."

William A. (Bill) Konopka, plant superintendent, said, "Years ago we used to think our dip method was pretty efficient when we were

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getting 44 chairs per gallon of paint. But now, with our automated, electrostatic setup, we get a better quality finish. We have no difficulty in applying a consistently uniform coating of 1.0-mil thickness to the work, with no runs or sags, and we get 100 chairs per gallon. So, instead of working out of several hundred gallon tanks, we work out of 5-gallon buckets."

Set up for Using Clean Compressed Air

DO YOU realize what unclean or excessively moist compressed air will do to your spray painting? It can ruin paint and lacquer finishes. Most of the contamination stems from water in the compressed air. How does water get into the compressed air?

All air contains moisture. As the temperature of the air increases, its capacity to retain water vapor increases. Conversely, as the temperature of air is reduced, its capacity to retain water vapor is decreased.

Air enters the compressor at atmospheric pressure and temperature. As the air is compressed its temperature is raised, which increases its capacity to hold water vapor. Then, as it travels through the pipe lines, it is cooled; this then causes the moisture to condense, resulting in excess water in the system. Eventually some parts of the pipes and pipe connections rust and must be replaced. But long before this happens, particles of rust scale may

Laboratory Ovens

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break loose and enter the air stream. This can cause serious trouble.

How can compressed air be kept clean and dry? Let's start at the compressor intake. It should never be close to steam or air exhaust vents where it will pick up moisture, dust or perhaps paint overspray. An air cooler should be placed between the compressor and the compressed air supply tank. This will do much to prevent moisture laden air from entering the pipe system. With fairly dry air entering the pipe system and with pipe lines to air operated equipment entering the main pipe line at the top rather than at the bottom, plus drain valves installed at correct locations and moisture separators located in the lines from the compressed air supply tank, you are set up to supply your spray painting facilities with clean dry air.—*P. C. B.*

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The Telephone Salesman

I AM AWFULLY stupid. My job is to evaluate chemical raw materials and finish coatings which salesmen from various companies send me, to check out as a prelude to what they hope will be volume sales. Of course, like most chemists, I just can't keep up with all of the new materials that are constantly arriving. Sometimes though, I manage to find something that has promise but just has a few minor deficiencies. In this instance I could use some real technical help from the supplier. I wait for days and even weeks for the technical representative to appear again.

One day, while in the midst of some very important test for the Boss, the phone on my desk rings and I have to stop in the middle to answer it. After all, it could be the Boss himself who dislikes to be kept waiting. It is the salesman whom I've been waiting to see. On the phone he asks if I need any help and I attempt to describe my problem. "Just a minute, my test for the Boss has rolled off my bench and it's a mess on the floor.

"Oh yes, the problem; well I need a bit of help." The usual procedure is that he will go back and check with his lab. Of course, he hasn't seen the failure on the panels in front of me, but he is going to check with his lab.

About two weeks later he calls again. This time, luckily, I didn't have a "hot" test going. He inquires how I made out with my tests on his material. I remind him of the

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answers he was going to get from his lab which he obviously forgot. He then proceeds to give an off-the-cuff dissertation on the solution to the problem which he thinks exists but which he really knows nothing about. This is where my stupidity comes to the fore. I can't grasp the full impact of the rapid flow of meaningless terminology, particularly when I haven't had a chance to show him the problem in the first place.

I really don't mind when a salesman, who stops in regularly, calls to check upon a specific point. In fact, the telephone is then really an effective supplement. What I object to is the salesman who uses the telephone to conduct all of his business.

The telephone is a great help but some of the salesmen, who jokingly call themselves "peddlers" while I think seriously of them as such, just use the telephone to extremes. The telephone can only supplement but not substitute for the personal visit. So how about giving this stupid chemist, who cannot grasp things on the phone, a break? Stop in once in a while—that is, if you want to sell me something.—*T. J. C.*

Booklet on Solution Resins Published by BFG Chemical

Complete information on the preparation and application of vinyl solution resins for coating metal, wood, paper, fiberboard and rubber is contained in the 24-page Service Bulletin G-15 just released by B. F. Goodrich Chemical Co., 3135 Euclid Ave., Cleveland 15, Ohio.

Geon resin solutions can be applied by spraying, dipping, brushing or roll coating. The booklet explains methods of determining the best resin solution for a particular application based on the resin's molecular weight, solubility and solids content and the physical properties desired in the final coating.

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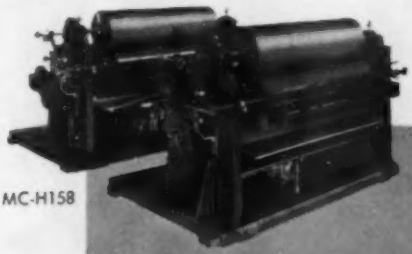

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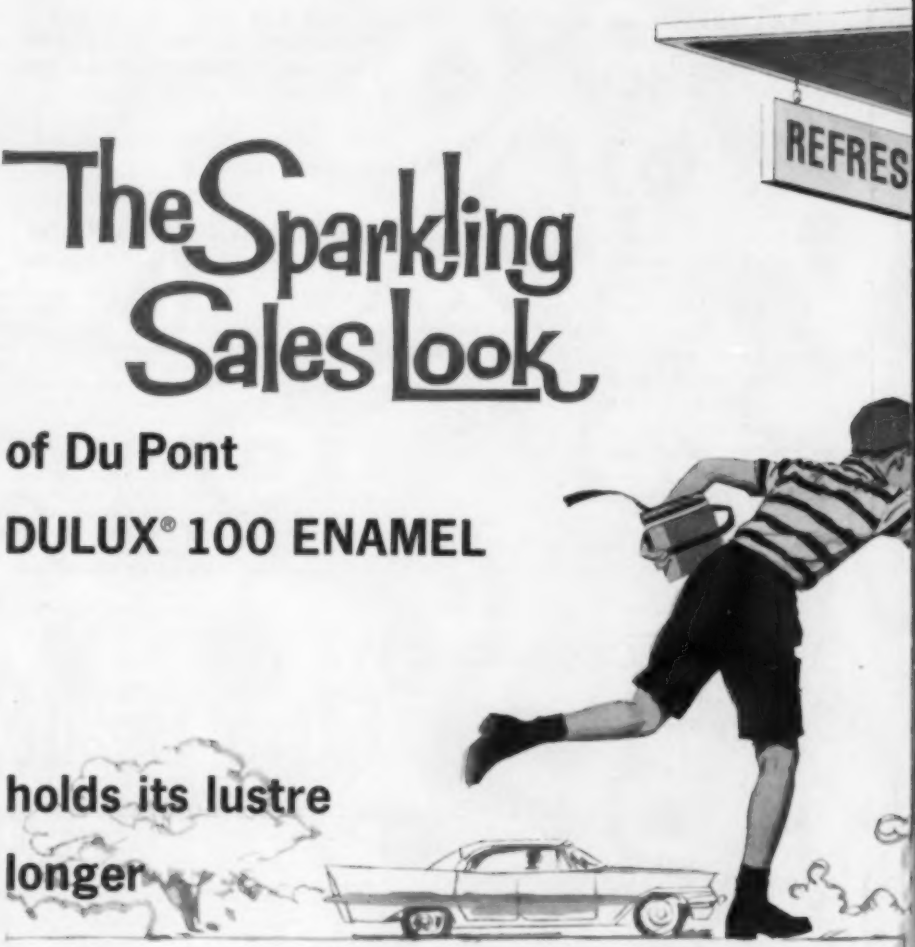

holds its lustre longer

Leading, sales-conscious manufacturers of vending machines specify Du Pont "Dulux" 100 Enamel. And with good reason. This dependable finish has a *balance* of properties that keeps products looking their appealing best■ By actual test, "Dulux" 100 holds its luster 3 times longer than former outside enamels. It is non-bleeding . . . resists blistering, chipping and cracking despite hard wear and temperature extremes. After 18 to 24 months' exposure in a Florida Test Farm, "Dulux" 100 showed no more chalking than many conventional enamels at 6 to 8

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months! ■ "Dulux" handles well on the line and is much harder and tougher after baking than conventional enamels. This makes the finished product much less likely to be marred on the production line, in transit or in the user's hands.

Get full details on "Dulux" 100 from your Du Pont Representative, or write: E. I. du Pont de Nemours & Co. (Inc.), 2502 Nemours Bldg., Wilmington 98, Del.

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EDITORIALS

Yes, More New Products Keep Coming

★ Ten years ago I was asked: "You formulators always seem to have a new material to put in your finishes. There must be a limit to the possible number of new products. When are you going to run out of new materials?"

Perhaps some day the flow of new film-formers, resins, pigments, additives, etc., from the raw material manufacturers will cease. That day certainly is not at hand, however. It seems to me that more new materials are being introduced now than ten years ago. Of course, some of these products never get past the pilot plant stage and are eventually dropped. Most of them do become commercial, however.

Naturally, any given product does not benefit everyone who uses industrial finishes. One new material may be very good for coating paper, but it will probably be unsatisfactory for steel. Another may fit well into baking formulations for steel, but be useless in lacquers for wood.

The word "new" is relative. Material may be on the market for years before its price gets down to the point where it can be used in certain moderately priced and even in some inexpensive finishes. It is then new insofar as that particular use is concerned. In many cases, several years elapse after a new product is introduced, before it is fully tested and its properties and potentials become well known to the trade.

Actually, many "new" materials are really old ones with a slight change or moderate improvement. For example, through the years many pigments have had their resistance to light improved. The new products of this type are generally substituted for the old with little fanfare. The user may not even know that a change has been made.

One does not have to worry about lack of new products in the industrial finishes field. The laboratories are busier than ever. I am certain that the next ten years will bring at least as many new products as the last ten years.—*George Grant.*

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

Human Factor Causes Many Finishing Problems

★ There is the story of a farmer who was asked by his neighbor if he was going to attend a lecture on how to farm better. "No, I don't believe so," replied the farmer. "I don't farm as good now as I know how."

Many finishing departments are in the same position as the farmer. They are not doing their work as well as

Self-spray paint troubles stop here

This is part of Sprayon's quality-control laboratory, where six full-time chemists and paint technicians make sure that your aerosol finishes—custom-loaded by Sprayon—never vary in color or performance. Before production begins, even on a routine re-order, prototype cans are made up in the laboratory and given an accelerated aging test equal to a year of shelf life. Test panels are then sprayed and the film is analyzed by precision instruments. Gloss and other characteristics are checked. Color is double-checked under a MacBeth light, the accepted standard of the paint industry. The spray pattern and the mechanical efficiency of the container are checked. All test data, materials and samples are dated, coded and filed for a year for later reference. Sprayon quality control is one reason why Sprayon has handled the greatest possible variety of contract-loading assignments for many of the nation's largest manufacturers—year after year after year. Get the full Sprayon story today.

SPRAYON PRODUCTS, INC. 2065 E. 65th St., Cleveland 3, Ohio

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they know how. For every finishing problem that is solved by some drastic change, such as adopting a new exotic finish or installing new equipment, there are probably ten that could be easily solved by simple means. For example, let's consider such things as: 1) Applying a uniform coat of finish; 2) Straining the finish in a dip tank at regular intervals; 3) Cleaning the metal that is to be finished; 4) Preventing the cleaning tanks from becoming contaminated; 5) Using the correct pressure when spraying; 6) Insisting on proper inspection of every finished article; 7) Adjusting the finish to proper viscosity; 8) Employing competent help; 9) Keeping the equipment in good working condition. These all seem simple, but they are not always done, thus finishing problems are created that never should have existed.

Carelessness, lack of attention, laziness and lack of knowledge—these elements cause a good proportion of all finishing problems. It would seem as if these things could be easily corrected, but in many cases there is no easy solution. What do you do, for example, about a well-meaning employee with years of service behind him, who every once in a while is careless or forgetful? Finishing departments that are well run and efficient often take their efficiency for granted. Conversely, those departments that are operated on more of a hit-and-miss basis often don't realize that they could be doing a better job, or that things are done quite differently elsewhere. It is difficult to convince a man that he has been doing a poor job for years. Here's something to think about.

Eliminate human weakness and many finishing problems will disappear.—*Edward Barnes.*

Wouldn't Change Finishes; Why? Excessive "Red Tape"

★ One of the things that varies from company to company—even companies in the same field—is, which individual has the real responsibility for selecting and buying industrial finishes. In some small companies the owner does the buying. In another company it may be the purchasing agent, the engineering department, general manager, vice president in charge of production, head of the finishing department, or someone else. Sometimes one person can make the initial decision to buy or change a finish, but he has to get an OK from someone else. There are a number of possible combinations in this sharing of responsibility. The end result can be good, or it can be bad.

I recall one company that uses paints of various colors. One color gave trouble periodically. The finishing department wanted to purchase this color from a different supplier, or at least get the formulation changed. However, it would have been so complicated a procedure to make this change and get new specifications written, that it was easier to go along with the old finish and put up with occasional trouble.

At another plant a finishes salesman told the purchasing agent: "You are using a good high-heat silicone finish, but you're really paying through the nose for it. I can give you an equivalent finish. It won't be cheap either, because silicones aren't cheap; but there will be substantial savings."

The purchasing agent replied that any changing of finishes would have to come from the engineering department. To the salesman's surprise the engineering department wouldn't even consider testing his finish. They didn't doubt its quality. They just were too busy with many other prob-

PRODUCTION LINE FINISHING

BUFFING • POLISHING • BURRING • LAPPING • SATIN FINISHING

SATIN FINISHING — BURRING — POLISHING COMPOUNDS

LEA COMPOUND— industry's pioneering greaseless abrasive compositions for burring, buffing, satin finishing, and flexible polishing; contains abrasives ranging from sharp, fast-cutting grits to fine, soft powders for delicate finishes.

LEA PLASTI-BRADE— flexible, fast-drying, liquid abrasive, burring, polishing and satin finishing compositions, available in a wide range of abrasive grit sizes.

LEABRAMENT— greaseless, non-flammable, quick-drying, liquid abrasive for burring and polishing; can be sprayed or brushed on wheels.

BRIGHT BUFFING COMPOSITIONS

LEAROX— fine abrasive compositions with "no free grease" designed primarily for buffing or coloring pieces which involve cleaning difficulties; does not pack up in recesses and ornamentations.

LEA LIQUABRADE— clean-working, fast-cutting and mirror-finishing liquid buffing compounds, providing in effect continuous operations and substantial economies in compositions and buffs; clean and safe, non-flammable, non-explosive; many abrasive types and grain sizes for all non-ferrous metals, steel, stainless alloys, and plastics.

LEA LAPPING PASTE— micron size controlled abrasive paste for accurate and fine surface finishing.

ADHESIVES and CEMENTS

AD-LEA-SIVE— glue-base sizing adhesive for buffing and polishing wheels to improve application of Lea Compound, or loose abrasives; available in bar form.

LEA PLASTI-GLUE— fast-drying, flexible liquid adhesive, without abrasives, for preparing polishing wheels and abrasive belts.

LEA GRIPMASTER— high bonding strength cement for polishing wheels and belts; used in setting up longer lasting polishing wheels and belts for both ferrous and non-ferrous metals.

POLISHING WHEEL and BELT LUBRICANTS

LEA LIQUALUBE— water soluble liquid lubricant for polishing wheels and belts; can be sprayed or brushed on.

LEA LUBAR— bar form lubricant for polishing wheels and belts where glazing is not a problem.

cLEAn-GRAIN LUBAR— special bar form lubricant to eliminate glazing on polishing wheels and belts.

BRIGHT PLATING PROCESSES and ADDITIVES

COPPER-GLO— Bright Copper — a proven brilliant high speed bath exceptionally tolerant to impurities.

CUPRALL— produces high speed buffable copper where brilliance is not required.

Q-LEVEL— a high speed lustrous copper process; produces excellent "hiding" characteristics. An ideal undercoat for bright nickel.

Q-STRIKE— A cyanide copper strike that produces a superior foundation for subsequent copper and nickel deposits.

PLATING ROOM ACCESSORIES

LEA ANALYTICAL METHODS— plater's short cut methods for analyzing plating solutions.

LEA LECTROMAG— portable electrical instrument for measuring the thickness of non-magnetic coatings on carbon steel and iron.

LEA KROMSAVERS— mist preventive for chrome and other plating solutions.

LEATARDENT— anti-stain dip emulsion; prevents staining and tarnishing of plated surfaces.

LACQUER ROOM SPECIALTIES

LEA COLDSTRIP— a room temperature stripper for enamels and lacquers.

LEA SYNSTRIP— high speed stripper for synthetic enamels; leaves non-ferrous surfaces smooth; no etching; especially effective in stripping epoxy resin coatings.

THE LEA MANUFACTURING CO.

16 CHERRY AVENUE • WATERBURY 20, CONN.

Lea-Michigan, Inc., 14066 Stansbury Ave., Detroit 27, Mich.
Lea Mfg. Company of Canada, Ltd., 1236 Birchmount Road, Scarborough, Ontario, Canada
Lea Mfg. Company of England, Ltd., Buxton, England
Lea-Ronal, Inc., Main Office and Laboratory: 139-20 109th Ave., Jamaica 35, N.Y.
Manufacturing Plant: 237 East Aurora St., Waterbury 20, Conn.

The Hallmark of Quality Products

For more data, circle 183 on colored card.

lems to bother with testing a new finish. After all, they had one that worked. They didn't seem to be impressed as to whether or not it was costing their company too much. Thus a chance for a substantial saving in the cost of material was lost because there was no good method in that organization for making a change.

Whatever the setup is in your company, the responsibility for buying finishes should be clear cut. There should not be a clash of authority. Making a change should not be too complicated. If it is difficult to make a change it will be difficult to make progress.—*Carl Jensen.*

Treated Water For W-W Spray Booths

Much has been said and published in favor of water-wash spray booths, and their advantages over dry booths for production spray painting. Yes, they do have some advantages but the main feature of any water-wash booth is its water curtain.

Other factors are important, such as the size and location of the booth, the height of the conveyor in the booth, proper lighting, adequacy of the exhaust system, etc.—but if the water curtain doesn't function properly then you might as well have a dry spray booth.

The water for water-wash spray booths must be correctly treated. If not, it will allow the overspray and paint sludge to clog water pipe lines and nozzles in the recirculating system. This, in turn, can cause breaks in the water curtain, with the result that waste paint will build up on the back wall of the booth. When untreated water is used the paint is dispersed in the water until it becomes too viscous to pump through the nozzles.

No single water treating compound can be expected to successfully treat water in a water-wash booth for all types of coating materials. Consult with your chemical supplier. Give him all of the facts, including type of material that is being sprayed, size of booth, tank capacity, hours of operation, volume of production, etc. His service representative or his chemists will make tests and recommended a water treatment to suit your particular needs.

Once you learn what material and what strength solution to use, someone in your organization should be assigned the responsibility of making tests at regular intervals so you will be sure that the solution is kept at proper strength to perform satisfactorily.

Meters are available which attach to the spray booth and show whether the water-treated solution is above or below its correct strength. This kind of meter helps to maintain the correct water condition and helps to prevent waste of the water treating chemical.

Easy Color Separation; Fast Cleaning of Masks

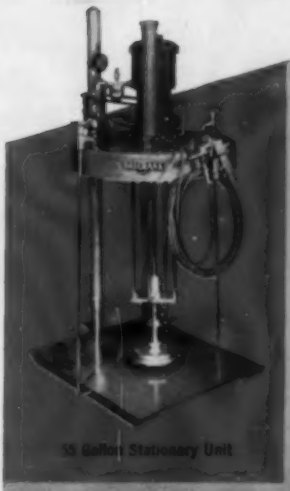
Do you use precision metal masks for color separation in painting or decorating your product? These masks do an excellent job of separating the various colors, as well as protecting surfaces where a paint coating is not wanted. Precision masks are made in sizes ranging from a few inches each way, up to 18x72-in. and larger. In many cases the object to be painted is held firmly against the mask by compressed air.

The metal or plastic masks may be used over and over again, until their openings become clogged with paint. Just how many pieces can be

NEW BALCRANK

HY-SPRAY

airless spray equipment



55 Gallon Stationary Unit

HANDLES WATER-BASE

as well as all other PAINTS

You get these many plus features when you use the New Balcrank "HY-SPRAY" Airless Spray Equipment:

- Successfully sprays all types of paint, INCLUDING WATER-BASE
- Faster than all other methods for finishing, refinishing and maintenance
- Cuts cost of materials
- Cuts cost of entire painting operation
- Eliminates expensive booths and exhaust equipment
- 10 different models available, both 5/10 gallon and 55 gallon units
- Many exclusive features, offered only by Balcrank

Balcrank manufactures a complete line of regular air operated paint spray equipment, transfer and material pumps in Carbon Steel, Brass and Stainless Steel. Write or wire today for complete information on "HY-SPRAY" or any Balcrank pump equipment.

5/10 Gallon Portable Unit

BALCRANK inc.

10 Disney Street Dept. IF-1 Cincinnati 9, Ohio

For more data, circle 184 on colored card.

sprayed before it is necessary to clean the mask depends upon the number and size of openings in the mask, and the type of coating material used. Paint that accumulates in the openings can be removed by washing the mask in solvent.

Washing the mask by hand in an open solvent tank is a slow, laborious job, and the open solvent tank is a fire hazard. However, hand washing is not necessary. Safe mask washing machines are now available for cleaning masks up to as large as 18x72-in. The mask is simply placed in the washer and within 20 to 25 seconds it is clean and ready for use again. For high speed production, two masks are often used; one is in service in the paint spray machine while the other is in the mask washer being cleaned. In this way production can be almost continuous.

Who's Responsible For a Place Running Smoothly

★ In your finishing or product painting setup, will the superintendent or foreman agree that all is running smoothly? All materials, equipment, methods and personnel?

If the answer is "no," then you need someone to do some trouble-shooting and to fix up whatever is not 100% efficient. One man should be assigned to the responsibility of seeing to it that everything is operating satisfactorily on the line where paints are mixed, pumped to the equipment, or delivered in pressure tanks. Then there's the conveyor, compressed air, heat and ventilation, the work holders, ovens, etc.

According to the size of the operation, one man may be able to handle both the surface preparation and the finishing or painting setups. In larger operations, the two may have to be separated, having one man on duty for each type of equipment. In very small operations perhaps the foreman will have time to assume the responsibility, but this often detracts from his overall job as a supervisor.

Finishing responsibility includes proper metal cleaning and phosphatizing the surfaces of metal items to be painted, titrating solutions in the metal washer, checking solution temperatures, checking on the mixing of the paint, testing viscosity and film thickness, etc.

If coatings are sprayed, the atomizing and fluid pressures must be checked in order to maintain the pressures prescribed in the finish specifications. Finally, the dryoff and bake oven temperatures should be maintained at prescribed levels.

If the coating is supposed to bake out for 20 minutes at 300° F., a temperature of 250° F. will not turn out a satisfactory finish. Regardless of the efficiency of the oven thermometers, every oven should be checked at regular intervals to determine if any hot or "cold" spots exist.

Whenever you see a finishing room running smoothly, turning out a uniformly high quality finish day in and day out, you can safely bet that there is at least one efficient man watching all of the details, and preventing trouble by eliminating some of the variables. It is a joy to watch such a system operate. Visitors can come in any time and there will be no occasion for anyone in the department to apologize for, or try to explain away some of the short comings that appear therein.—*P. C. B.*

Wire Basket Bulletin

A 2-color 8-page bulletin B-10 on woven wire baskets for degreasing, cleaning and dip-coating is offered by the Newark Wire Cloth Co., 351 Verona Ave., Newark 4, New Jersey.

For more data, circle 27 on colored card.

soft enough to "baby" a baby grand

Sun Ray steel wool

During the critical oiling-off process on fine piano cases, The Baldwin Piano Company specifies baby-soft Sun Ray Steel Wool #0000 grade to bring out the rich glossy finish. For rubbing down all fine furniture, Sun Ray is the softest, finest steel wool available. Its long, uniform, resilient strands remove small scratches and impart a mellow smoothness to woods. Sun Ray's precision manufacturing and vigilant grading assure dependable steel wool quality for perfect finishes every time!

Try Sun Ray! Write today (on company letterhead) for a generous sample! Sun Ray makes steel wool in a variety of forms and grades for every job . . . Layer Built Pads . . . Rolls . . . Reels . . . Bulk Pound Tubes.

THE WILLIAMS COMPANY • LONDON, OHIO

Sun Ray® **STEEL WOOL**

manufacturers of quality steel wool for over 40 years

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KOCH

SYSTEMS FOR HIGH SPEED

Plywood Panel Finishing

KOCH AUTOMATIC SYSTEMS are engineered for semi or complete automation and equipped to finish flat panels by any process sequence. You can rely on Koch to specify the proper conveyorization for best production. It may be a chain or belt conveyor . . . a wicket or a stacking conveyor. You are assured of fast, efficient drying by Koch's judicious choice of ovens . . . cross-flow, turbo-flow, counter-flow, high-velocity or any of these combined with a radiant energy booster. Koch works in close cooperation with your material suppliers to assure single responsibility results.

Your product may be shingles, panels, siding, tile, etc.

KOCH engineers will survey your requirements **without obligation.** You will be given a complete survey with specifications for utilizing your present or proposed factory.

Multi-zone, high velocity convection dryers or a combination of convection and infrared dryers have doubled production in many plants by speeding up drying operations. Illustrated above is a two-zone high velocity dryer, the first zone operating at 150°, the second at 250° F.

Application machinery such as the Steinemann Curtain Coater illustrated above is furnished as a part of the integrated system.

Various automation devices are included in an integrated system including the turn over shown.

GEORGE **KOCH** SONS, INC.

Evansville 4, Indiana

European Representative: COLONAIR, PARIS, FRANCE

For more data, circle 186 on colored card.

ROCKFORD VARNISH

R/V

ROCKFORD, ILLINOIS

think it over

Pensive? Ah, yes. Pretty? Ah, *yes!* You, too, must have to be pensive at times, pondering a solution for a finishing problem. Why not let *us* do part of your worrying for you; we've had a lot of experience at it. Our solutions — with R/V "Real Value" Industrial Finishes — have been beautiful *and* practical. As for your particular problem, don't think it over any longer — just give us a call . . .

MANUFACTURERS OF PROTECTIVE AND DECORATIVE FINISHES

For more data, circle 187 on colored card.

LETTERS from READERS

Paint Arrestors

In the Feb. 1961 issue, pages 99 and 100, one of your writers mentions the fact that a fire hazard and objectionable flying overspray can be prevented by the installation of paint arrestors. We will appreciate it if you can give us more information regarding this; also, the manufacturer of such paint arrestors.—*H. C.*

We are interested in obtaining more information regarding paint arrestors referred to in your article, "Control Paint Overspray and Fire Hazard," in the February issue of *Industrial Finishing*.

We use lacquer and sealer in our woodworking plant and would like to know if these arrestors are practical for our use.—*C. C., Inc.*

Try Research Products Corp., 1015 E. Washington Ave., Madison 1, Wis. —*Editor.*

Fire Apparatus Corp.

In the March issue, in the Questions and Answers section on page 98, under the heading, "Coating for Interior of Water Tanks," the question is signed, "U. Fire Apparatus Corp.". If possible, would you advise us the complete name and address of this corporation?—*F. D.*

Yes, it's Universal Fire Apparatus Corp., Logansport, Indiana.—*Editor.*

That Magnetic Belt

Several readers have asked for more information about the magnetic belt illustrated on page 26 in Feb. issue, in connection with the article entitled, "Processing and Painting AC Air Cleaners." We are pleased to refer them to Magnetic Engineering & Mfg. Co., Clifton, N. J.—*Editor.*

Light Boxes for Color Matching

We noticed in the February 1961 issue, page 82, in the "Letters from Readers," a reader asked you for literature and other data on Standard Light Boxes that are made for matching colors. Would you please forward us the names and addresses of concerns that can supply these boxes? —*F. M. C.*

Yes, in a letter we are giving you the names and addresses of three of them.—*Editor.*

Water Filters for Wet Spray Booths

Some time ago I remember seeing, in this magazine, two advertisements on water filters to be fitted to water-wash spray booths. I believe one was a filter which was in the water and the other was a scooping device for

PERFEX SATIN FINISHES FOR •TABLES

No Rubbing Needed!...

Many table manufacturers are using Perfex Satin Finishes to secure that rubbed appearance and waxed feel—without the costly rubbing operation—and while Perfex Satin Finishes are ideally suited to tables, *numerous other pieces of furniture are likewise candidates* for these labor-saving, time-saving finishes.

Perfex was the original "flat" to be made by a new and different process (without the use of stearates or flattening agents) and it is still the "flat" which comes nearest to producing an actual rubbed varnish appearance. It is the Perfect flat finish—quick set, quick dry, waterproof, liquor proof, good build, full smooth body, beautiful rubbed effect, smooth waxed feel. Available in a full range of sheens.

PERFECTION

If you manufacture tables or other furniture and are interested in securing an excellent rubbed finish effect, without a costly rubbing operation, we invite your inquiry.

PAINT AND COLOR COMPANY

INDIANAPOLIS 2, INDIANA

For more data, circle 188 on colored card.

the pigment. I don't seem to be able to locate these ads at present and I wonder whether you could send me the addresses of the manufacturers so we may contact them?

We have supplied one of the drum manufacturers in Belgium with an automatic spray painting machine and whereas our booths are satisfactory for normal manual operation, we find that they do not do quite the job they should when we have 12 automatic guns spraying half of the time. —*D. D., Brussels, Belgium.*

In a letter we are giving you the name and address of the concern we believe you have in mind.—*Editor.*

"Well, that's how the old ball bounces."

Controlled Paint Viscosity

In the February issue of *Industrial Finishing*, on page 23, you have an article about Automatically Controlled Paint Viscosity. Would you kindly tell us where we can find out more about this equipment?—*E. L. J.*

Try Norcross Corp., 268 Newtonville Ave., Newton 58, Mass.—*Editor.*

Airless Spraying Can Be Hot or Cold

We are very pleased to see the article on pages 78, 80 and 82 of March issue of *Industrial Finishing* about finishing operations in the plant of Peters-Revington Furniture Co.

Apparently, when the author or Editor prepared this article he was under the mistaken impression that quality airless spraying is exclusively bracketed by "hot airless spraying." On page 80, the article reads, "The material was heated so it would be sprayed with the company's newly developed spray gun at 120° F."

We would like to emphasize that the use of heat is for viscosity control and is a valuable asset, but the most important part about this application and its ability to accomplish the job was the H-Gun. . . . The fact is that 80% of our important high quality furniture installations in the North Carolina furniture belt are unheated applications, all of which would be impossible without the H-Gun. . .— *The Spee-Flo Co.*

Safe Sheet Metal Cleaner

Can you suggest a non-toxic, fireproof, quick-dry hand cleaner for oily sheet metal cabinets? Must be less than 30¢ per gallon.—*O. S. Co.*

In a letter we are suggesting several possible sources of supply.—*Ed.*

Grained Decals

We noted with interest an inquiry in Nov. issue, page 90, relating to grained decal films and the suppliers thereof. We too are interested in learning the sources for such decals and would appreciate your furnishing

FABRICATOR SOLVES PRODUCTION PROBLEM- SAVES MATERIAL WITH HYDRAAIRLESS 30 AND H-GUN.

Mr. Floyd Kiel,
Superintendent of Miscellaneous Fabrication
The Offenhauser Company

When the Offenhauser Company of Houston, Texas, was awarded the special fabrication contract for a new 44 story skyscraper, an added burden was placed on the painting facility, already operating at capacity. It meant adding a second shift or building additional booth facilities, and space was at a premium.

Airless spraying offered a solution since it would allow painting in the open shop fabrication area. Various airless systems proved unsatisfactory on the special shapes common to this type work until the Spee-Flo HydraAirless with the *H-Gun was tested. Finishing results were comparable to the finest air atomization, plus the absence of overspray.

HydraAirless 30 is easily rolled to any point in plant for paint application.

*Pat. Pend.

Says Mr. Floyd Kiel, "We were intrigued with the advantages offered by airless spraying. The lack of overspray would permit us to spray in the open shop area avoiding a costly expansion program or a second shift. We could not obtain satisfactory results on the many special shapes, however, until we tried the Spee-Flo HydraAirless and H-Gun. This equipment eliminated our production bottleneck, and best of all, we are saving 25% on our material. *The H-Gun really made the difference.*"

If you'd like to use airless, but have tried it without getting the desired results, we urge you to see a demonstration of the H-Gun and HydraAirless. You'll be surprised at the change in airless finishing. Contact the nearest distributor or write to Spee-Flo for a demonstration.

The Spee-Flo Company

6614 Harrisburg, Houston 11, Texas

For more data, circle 189 on colored card.

this information at your earliest convenience.—*S. T. Co.*

It is noted in the Feb. issue, in the "Letters from Readers," that interest has been displayed for sources of supply for decals in both wood and marble. We are also interested in this material and would appreciate your furnishing the names and addresses of suppliers of such decals.—*N.P.Ry.*

In a letter we are giving you names and addresses of several suppliers.—*Editor.*

Trichlorethylene Cleaning And Painting

We have a customer who is seriously contemplating the use of trichlorethylene vapor application in his painting setup.

Will you please give us any information you have on this subject, plus leads on where an application of this type might be in use within the Syracuse, N. Y., area? I believe that Du-Pont has something to do with this type of equipment or process, so that their trichlorethylene can be used.—*I. R. Co.*

You will find complete answers to your questions by referring to Nov. 1960 issue of *Industrial Finishing* and reading the illustrated feature article, "Triclene Finishing Parts for Corvair Engines," pages 24-32 and the advertising on pages 27, 28, 29.

Zahn Viscosity Cup

We have a picture of the Zahn cup, taken from an advertisement that appeared in August 1960 issue of *Industrial Finishing*, page 37. Will you please send us the address of the company that makes this instrument? We wish to buy one just like it—*F.A.E.*

A company that has them for sale is Gardner Laboratory, Inc., P. O. Box 5728-FT, Bethesda 14, Maryland. —*Editor.*

Fishing Lure Finish

A Canadian firm has contacted us, asking for information on a kind of finish applied to fishing lures. We are enclosing a sample which is a little damaged on the outside; the inside is representative of the finish wanted.

It seems to us that the finish is a kind of wrinkle paint protected by a lacquer coating. We are wondering whether you could identify this finish for us and mention names of firms in the United States or Canada who would be able to supply the materials, or custom finish the articles for the firm in question?—*T. I. S.*

I have consulted with two paint chemists on the finish applied on your

[*Continued on page 91*]

PROVEN IN MANY DIFFERENT FIELDS

for *High Production, Quality,* and *Simplicity of Operation*

How the NEW *GASWAY Kinetic-Kurtain* Coater

helps you improve finish, save material and increase production

Production Proven—In Plant After Plant

Kroehler Manufacturing— *Furniture*

S. A. Hirsh— *Store Fixtures*

F. S. Harmon— *Furniture*

Simpson Redwood— *Redwood Siding*

Jones Veneer & Plywood— *Plywood Panels*

Koppers, Inc.— *Prefab Homes*

Mississippi Products— *Cabinets*

Wood Specialties— *Siding*

Marathon Paper— *Paper-Food Cartons*

Gateway Manufacturing— *Kitchen Cabinets*

Architectural Hardware— *Cabinets*

Kieckhefer-Eddy— *Beer Cartons*

Deka Corporation— *Masonite Wallboard*

K. J. Quinn Co.— *Paint Formulating*

Wallace Manufacturing— *Tileboard*

URB Products— *Toys*

CHECK THESE FEATURES:

- ☐ Uniform film thickness control
- ☐ Smoother films even with fast solvents
- ☐ No flow-mark problems
- ☐ High speed roller coating economy

GASWAY CORPORATION

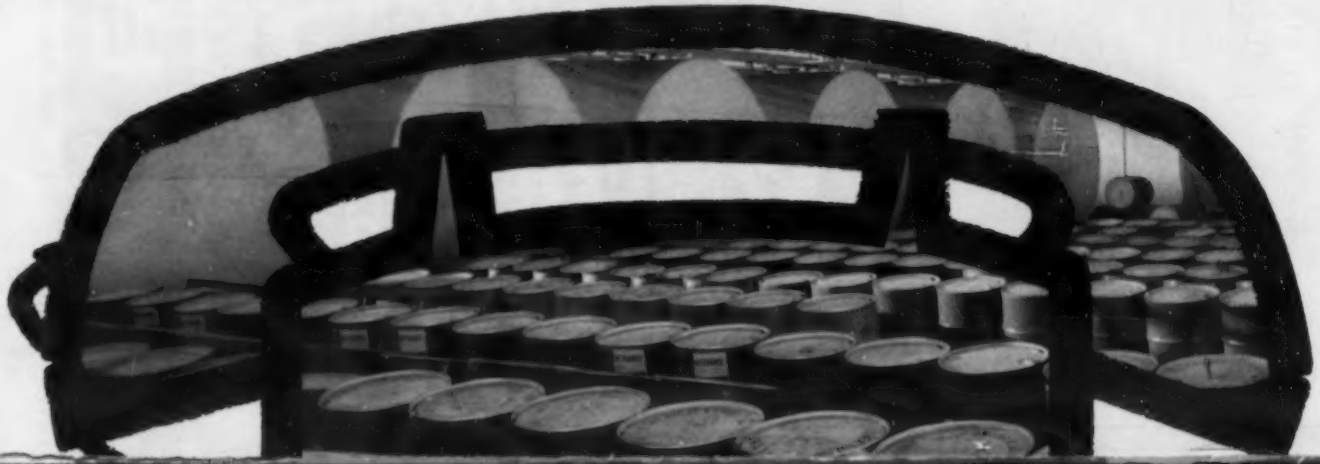
6463 N. RAVENSWOOD AVE.
CHICAGO 26, ILLINOIS
SHELDRAKE 3-1414

For more data, circle 190 on colored card.

THE SOLVENTS AND CHEMICALS GROUP

control inventory...

"Store" your solvents and chemicals here!



Is inventory control one of your big problems right now? Many firms like yours have licked it—easy. Simply by picking up a telephone and dialing their local SOLVENTS AND CHEMICALS GROUP plant. Here, ample stocks of quality products from America's leading producers are always maintained. From bulk shipments to drum lots, these on-the-spot facilities mean faster delivery, economical prices, helpful service—and the perfect solution to your inventory problems. Today there are 21 SOLVENTS AND CHEMICALS GROUP plants and stock points conveniently located throughout the country to serve you. Make your call now.

Aliphatic Petroleum Naphthas, Alcohols and Acetates, Alkanolamines, Aluminum Pigments, Chlorinated Solvents, Glycerine, Glycols and Glycol Ethers, Ketones and Esters, Petroleum and Coal Tar Aromatic Solvents, Plasticizers, Resinates, Rosins, Surfactants, Synthetic Resins, Terpene Solvents, Waxes.

THE SOLVENTS AND CHEMICALS GROUP, 2540 W. FLOURNOY STREET, CHICAGO 12, ILLINOIS

SC Solvents Chemicals Group Member

Buffalo, Buffalo Solvents & Chemicals Corp., TR 6-1572
Chicago, Central Solvents & Chemicals Co., SE 3-0505
Cincinnati, Amsco Solvents & Chemicals Co., EL 1-4700
Cleveland, Ohio Solvents & Chemicals Co., CL 2-1100
Dallas, Texas Solvents & Chemicals Co., FE 1-5428
Detroit, Western Solvents & Chemicals Co., WA 1-6350
Erie, Buffalo Solvents & Chemicals Corp., GL 6-3951
Ft. Wayne, Hoosier Solv. & Chem. Corp., Anthony 0213
Grand Rapids, Wolverine Solv. & Chem. Co., CH 5-9111
Houston, Texas Solvents & Chemicals Co., OR 2-6683
Indianapolis, Hoosier Solvents & Chemicals Corp., ME 8-1361
Kansas City, Missouri Solvents & Chemicals Co., CH 1-3223
La Crosse, Wisconsin Solvents & Chemicals Co., LCRS 2-3011
Los Angeles, Central Solv. & Chem. Co., (Cal.), UN 4-7711 or SP 3-3471
Louisville, Dixie Solvents & Chemicals Co., EM 8-5828
Milwaukee, Wisconsin Solvents & Chemicals Co., GR 6-2630
New Orleans, Southern Solvents & Chemicals Corp., VE 3-4666
Rochester, Buffalo Solvents & Chemicals Corp., LO 2-5980
St. Louis, Missouri Solvents & Chemicals Co., GA 1-3495
Toledo, Toledo Solvents & Chemicals Co., JE 6-3771
Windsor, Ontario, Western Solvents & Chemicals Ltd., CL 2-0933

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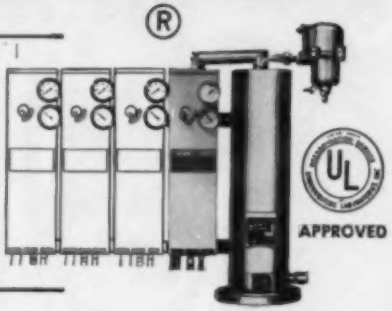
LEADING MANUFACTURERS* HOT-SPRAY WITH

THERM-O-SPRAY®



APPROVED

* This Therm-O-Spray Heater Type SPC-5 is installed at Western Electric Company, Springfield Gardens, L. I., N. Y. together with six other Therm-O-Spray units.

In their different plants Western Electric Company totally have about 90 THERM-O-SPRAY units installed.

There is no pump . . . nothing to wear out. There is no gasket or packing to leak. Heat transfer is synchronized with spraying. No overheating of paint . . . no clogging. Preheated atomizing air—therefore no water condensation.

THERMOSPRAY COMPANY, Inc.
60 East 42nd Street, New York 17

Warehouse, service and spare parts sales:
155 First Street,
Mineola, New York

Distributors invited.
Some territories still open.

can be expanded into multicolor units

THERM-O-SPRAY
CUP HEATER TYPE LFK

For auto refinishers and others, who use spray guns attached to suction or pressure feed cups.

Very suitable also for paint manufacturers for testing and formulating their paints for hot spraying.

For more data, circle 192 on colored card.

sample fishing lure. They appear to be agreed that it seems to be a non-leafing aluminum of extra fine grade, mixed with a cellulose acetate butyrate, which would produce a hammered effect. Then a clear coat of the cellulose acetate butyrate is applied over the surface. For more details on formulation, you are referred to Formulators Notes, the name of which I am giving you in a letter. Also, in a letter I am suggesting the names and addresses of concerns that have developed finishes for fishing lures.—*Field Editor.*

"Alright, you look great! Hurry up and take your sample!"

Conveyor Lubrication

Could you tell me the maker of the lubricating devices referred to in the articles on page 22 of February issue?—*O. M. B., Bruges, Belgium.*

Yes, one manufacturer is Stewart-Warner Corp., Alemite Division, 1850 Diversey Parkway, Chicago 14, Ill.—*Editor.*

Solvents for Finishes

Can we have three sets of tear sheets of the 5-page article, "Solvents for Industrial Finishes," by F. Warren Porter, as published in February issue?—*G. Co.*

Yes, we are sending them.—*Ed.*

White-Grip Bowling Balls

Recently I noted an article in your magazine. Actually the article was pasted under the glass counter of the bowling alley where I go bowling. The article was entitled, "Painting the White Grip in Bowling Balls." It is a novelty finish for the finger and thumb holes. It was signed, Larry Stone, Anaheim, Calif.

I am interested in having the above mentioned "white grip" done on my bowling ball. As the manager of the alleys couldn't tell me where it could be done, I am taking the liberty of writing directly to you in the hope that you may be able to supply the necessary information.—*H. F., Culver City, Calif.*

We assume that any custom finisher could do this. Since you are in the same state as the author of the article, we suggest that you write him. His street address is 2644 Stonybrook Drive.—*Editor.*

Wet Thickness Gauge

In Nov. 1960 issue, page 90, there is an inquiry regarding a wet film thickness gauge and where it can be obtained. Would you kindly send information regarding the above, to our staff?—*Borden Chem. Co.*

It's a product of Nordson Corp., 55 Jackson St., Amherst, Ohio.—*Editor.*

The Force Drying of WOOD FINISHES

By P. C. BARDIN, Field Editor

DUE TO CERTAIN structural characteristics, wood could be continually gaining or losing moisture caused by changes in the temperature and humidity of air surrounding it. Sealing the pores of the wood by applying finishing materials will stop absorption and loss of moisture under normal use. However, before these coating materials are applied the wood must be dried to the point where its moisture content is only 5% to 8%.

A suitable period of drying must follow the application of each material in the finishing system, for example, the stain, filler, sealer, intermediate and top coats. Modern production schedules do not permit extended air drying periods. It is for this reason that most manufacturers of wood products use what are termed force drying ovens wherein the temperature seldom if ever exceeds 140° F.

Evaporation, Oxidation and Polymerization

The thin coatings of various finishing materials applied to wood surfaces dry by evaporation, oxidation or polymerization, depending upon the type of material used. For example, NGR stains, water stains, lacquer shading stains, toners, lacquer sealers and lacquer top coats dry by evaporation.

Some pigmented stains, fillers, varnish sealers and varnish top coats dry by oxidation and, in some cases, by polymerization. If you use a finishing material that is thinned with a solvent, then obviously the solvent must be evaporated before drying can take place. Materials that contain vegetable oils as film formers dry by oxidation. Mild temperatures with plenty of air circulation aid in drying by oxidation. Plenty of air circulation aids in evaporating solvents in the material and also provides the necessary oxygen for drying by this method.

Polymerization is a chemical change that results in the formation of a new compound, the molecular weight of which is a multiple of that of the original substance. This chemical reaction could be accomplished through the use of a controlled volume of catalyst added to the resin-based material, plus heat to increase the rate of polymerization. Temperature increases from 100° to 145° F., with added humidity in the oven, serve to shorten the time required for polymerization. [*Continued on page 94*]

Spray-paint more places with this Dyna-Spray

PORTABLE AIRLESS SPRAY UNIT

Lincoln's portable "No-Air" Dyna-Spray gives spray coating wider application. There is little overspray or bounce-back . . . no need for elaborate ventilating systems . . . you roll this compact airless unit almost anywhere you want to apply paint or other finishes. Dyna-Spray delivers a well-defined pattern so evenly that most coats apply without sag. One coat usually is enough. Lincoln Power-Master pump puts more material on the work surface to cut waste. Model 1721, the non-tilt portable with a 5-gallon reservoir, costs less than $800, complete with spray gun, hose, built-in pump elevator, agitator and accessories. Other models are available for 5- or 55-gallon containers.

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[*Continued from page 92*]

Heat, Humidity and Air Circulation for Drying

Some formulations of finishing materials will require temperatures in excess of 120° F. to produce maximum hardness in the film. Temperatures above 145° F. should be avoided because of their possible harmful effect on the cellulose fibers in the wood, and also on the adhesive used in bonding plywood and structural wood joints. The supplier of finishing materials should be consulted as to the correct temperature, humidity and time to use for curing the particular finishing materials he supplies.

Basic requirements for force drying a wet finish coating on a wood surface are: Evaporation at a prescribed desirable rate, sufficient air circulation, and ovens with controls that will maintain an established heat and humidity for a predetermined length of time.

While solvents must first evaporate before drying begins to take place, they must be slow enough in evaporating to permit a good flow-out of the coating material. We must avoid bubbles of escaping solvent vapor as these could cause cratering. Sufficient initial flash-off (air drying) time must be allowed before the finished product enters the force drying oven.

Perhaps a lower oven heat, or a reduction in air circulation, or both, may be required to lower the rate of solvent evaporation. On the other hand, special care must be taken to avoid having too low a temperature—possibly to the dew point, which could cause condensation to actually wet the surface. This condition would cause blushing or blooming. A proper relationship between the particular type of solvent used in the material, and the temperature and relative humidity is required for correct evaporation of the solvent.

If blushing occurs, a reduction of air circulation is indicated; also a reduction in the relative humidity of the oven air—or an addition of a suitable retarder to the coating material.

Direction of Air Flow; Recirculated Warm Air

The movement of air in a conveyorized force drying oven should be in reverse to the direction that the finished pieces are traveling so the drier air will contact the drier film first, to provide the best drying efficiency. In other words, the direction of air flow is from exit to entrance of the oven.

To force the drying of any finish coatings that have been applied to wood surfaces calls for the use of controlled heat, humidity and air circulation.

An accepted rule is three parts of recirculated air to one part of fresh air in force-dry ovens. The National Board of Fire Underwriters requires not less than 10,000-cu.ft. of fresh air for every gallon of solvent to be evaporated.

Ovens used for force drying wood finishes are just as important as those high temperature bake ovens

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used for curing the enamel finishes on metal products. The force drying oven should be designed by competent engineers working in conjunction with the supplier of finishing materials because the supplier is or should be an authority on force drying of wood finishes.

Naturally there should be no hot spots or "dead" air areas in the entire oven. A uniform circulation of warm air is needed to dry the lower as well as the top areas of the product. Lack of a uniform circulation of air throughout the oven may cause uneven drying in the products. Correct and controlled ventilation of the oven is necessary to reduce the fire hazard and to speed up drying of the finish.

It is desirable to provide conveyorized force drying ovens with air seals at both conveyor entrance and exit. This accomplishes three purposes: It 1) maintains a prescribed temperature for the drying period, 2) is economical, as no heat is wasted, 3) provides more comfortable working conditions in areas adjoining the oven, especially during the summer months.

Oven Controls; Cleanliness; Air Make-up System

The oven should have adequate controls and indicators for showing the correct temperature and humidity at various points inside. Tests should be made at regular intervals to determine the accuracy of the indicators and oven control equipment. Also, at regular intervals, a recording thermometer should be run through the oven to determine what the conditions are inside that oven.

One thing that may be easily overlooked is the necessity for keeping the force drying oven clean and free of dust at all times. This can be done by using an industrial vacuum cleaner at regular intervals.

It is highly desirable to have an air make-up system where warm, filtered air is made available in sufficient volume to pressurize the entire finishing and force drying areas. Such a system will prevent dust from being drawn into these rooms from either the outside or from other plant spaces where such operations as machining, sanding, etc., are in progress. It will also prevent the exhaust fans from pulling heat from the ovens.

Ionic Shows Hand Electrostatic Gun at London Exhibition

A new portable electrostatic hand gun manufactured by Ionic Electrostatic Corp., Garfield, N. J., will be featured at the First International Industrial Finishing Exhibition to be held in Earl's Court, London, England, May 8 to 11.

The gun, Model 10, can be used for painting articles either indoors or outdoors with conductive or non-conductive coating materials. One model, the Rainbow Gun, can apply either yellow, blue, red or white materials individually or simultaneously merely by stepping on foot switches to open solenoid valves which meter out the particular colors desired.

Mr. John Sedlacsik, Jr., President of Ionic, will be in attendance at the exhibition to assist H. R. Noble Ltd., Ionic's European distributor.

Ed. Horner; Mac Dermid, Inc.

Edmund Horner has been appointed Research Chemist by MacDermid Inc., Waterbury, Conn., manufacturer of metal cleaning and finishing chemicals. He has been assigned to the research laboratory in the Waterbury plant. Before joining MacDermid, Mr. Horner was employed by another company.

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QUESTIONS and ANSWERS

What's Wrong With Our Dip Coating Operation?

Our finishing installation includes an automatic dip painting unit. The parts, hung from a conveyor, are dipped in a tank and then proceed over a drain board into a vapor chamber before entering a bake oven.

At the present time our paint usage is high because of the quantity of paint that is carried past the drain board to run off in the vapor chamber.

Has any method or device been developed for this type of system to minimize or control the paint carry-out?—*F. J. S.*

Usually, the vapor chamber is attached directly to the flow coat or dip tank enclosure, and the floor of the chamber is pitched and grooved for complete and rapid return of the drained paint to the supply tank. There are times when the building ceiling height limitations make it necessary to collect this material in a sump tank to be pumped back into the system. At any rate, dipping or flow coating can, and should be close to a 100% utilization method.

The proper planning of equipment of this type involves a great many details. The degree of the floor pitch, the depth of the grooves, etc., must be carefully planned for the particular building limitations. For example, if your process were flow coating, a reciprocator conversion package could easily be added which would greatly reduce the pumped volume. Whether it is dip or flow coat, vapor recirculation could be added to the vapor chamber; this would reduce the hazards and allow considerable exhaust reduction.

Generally, if paint pumps are involved and the tunnel floor is properly pitched, the floor can be flushed daily and the flushing mixture can be used for maintaining the proper working viscosity of paint during the day. In other words, if your theoretical paint mileage is 600-sq.ft. per gallon, I see no reason why you shouldn't be able to get the same mileage in production. It would be rather difficult to make further suggestions without having both the equipment and building area drawings available as a guide.

It is obvious from your letter that considerable paint waste is involved, and probably there is also some appreciable solvent loss. For further information, this is exactly the kind of work that I do nearly every week for one user or another. All of the necessary corrective planning for these changes can be done in from three to four days on location. This would include process evaluation, savings estimates, equipment change planning, and complete written change specifications.

It would give me great pleasure to have the opportunity to come in and work with you on this project for those few days. As you probably already know, your company is no

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.080 Hi-Carbon Spring Steel	3.84	3.96	4.09	4.23	4.40
.120 Cold Drawn Steel	3.88	4.03	4.21	4.40	4.75
.177 Cold Drawn Steel	3.98	4.17	4.45	4.73	5.37
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stranger to me and from time to time I have done some work in nearly all of the various plants.—*E. A. Zahn.*

With a modern enclosed dip tank and solvent vapor drain area or enclosure, which is connected to the outfeed end of the tank, paint waste should be less than 5%.

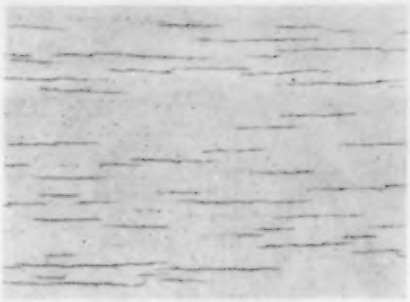
If the V-shape floor of the drain enclosure is elevated to a steep angle, and if the drain enclosure is attached, or practically attached to the dip tank enclosure, the excess paint that drains off the surface of the parts will remain in a fluid state in the solvent atmosphere and will drain back into the dip tank by the force of gravity. With this setup you are virtually extending the outfeed end of the dip tank to catch the excess paint as it drains off. The solvent vapor in the enclosure prevents the paint from oxidizing, which happens on the old fashioned drip pans.

I happen to know that a well-known engineering firm that advertises in this magazine installed a modern dip tank and drain enclosure in one of your company's plants in another city, and the system is operating economically and satisfactorily in every respect.—*P. C. Bardin.*

Why the Checks in Our Blond Finished Tops?

Attached to this letter is a small section from one of our dresser tops (see illustration). We have had considerable trouble with this particular suite due to checking. Have any of your readers had the same problem and what was done to correct the checking? Editor's Note: This is an "off-white" finish.

The cross band and face veneers are dried to 5½% moisture content, and the lumber core is dried to 7% moisture content. Cross bands are selected for color and are free of any defects. Our finishing operations are as follows:



This shows how and where the checks run.

1) Two medium coats of white lacquer toner.

2) Hand sand with No. 7/0 finishing paper.

3) One coat of water white sealer.

4) Gold shading on all carvings and top edges.

5) Two coats of semi-gloss water white lacquer.

6) Rub with natural color compound.

The panel shows checking on the finished side only. Nothing resembling any checking shows on the back. This leads us to believe that most of the fault is in the finishing material, or in its application.

We would appreciate it if you will give this matter some thought, and some possible suggestions for correcting this very serious problem.—*N. Furniture Company.*

Your letter describes a problem that nearly all furniture manufacturers have been plagued with at some time or other. You say that your trouble is with a particular suite, so it can be assumed that the materials and system used here have not been used on other furniture. By the same

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No matter what surface you work with—whether metal or wood—you can't afford dust! It can be costly. Improve every finish by insuring a speck-free surface before every finishing job. A quick "once-over" with a BOND TACK CLOTH removes every speck of dust in seconds—insures a gleaming surface every time.

There's a big difference in TACK CLOTHS, too—that's why BOND produces four different meshes of cloth with several types of formulation to give you the cloth that best "fits" your special needs, whether wood or metal surfaces are involved.

Packed in 150 yard rolls of 36" wide cloth or in handy cartons, as you prefer. Stays soft and tacky until the last bit is used up. Choice of Standard, extra Tacky or less Tacky —in WHITE or in GOLD.

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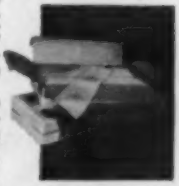

IN BULK: Size, 18x36", folded to 4½x18" or 9x18" for ease of handling. Cut & folded, ready to use.

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reasoning, it might be that this particular type of face veneer is used only on this suite.

You give the moisture content of the core stock, cross banding and face veneer. These figures represent moisture content when the wood is laminated, I assume. Such readings might not even be close to the moisture content at the time of finishing.

Your finishing procedure is normal so, off hand, nothing can be questioned about the operations. You say the panel shows checking on the finished side only. Have you tried subjecting the unfinished side to the same finishing procedures and observed the results?

Now let us look at the panel (see illustration). It is a panel finished with a pigmented material that completely hides the wood grain. There is, at a glance, very severe checking of the finish film that goes from the top film down into the wood. Closer examination shows that the face veneer has checked and these checks are not at a 90° angle to the surface, but are slanted through the wood, leaving a loose top edge along each major check. The film itself shows that some shrinkage may have occurred after rubbing. There are some checks in the top coat that do not follow the grain pattern—they have a gentle curved pattern and wander across the grain.

Assuming that the same veneer is facing both sides of the panel, a wet application of dye was applied to the unfinished side. Upon drying, the same pattern of checking that is in the finish could be seen in the unfinished wood. Testing the finish for adhesion shows fair adhesion to the wood and excellent intercoat adhesion. The film is very hard and brittle.

It has long been recognized that some woods are more prone to checks than others. Veneers of low density, that are rotary cut, have less check-

ing resistance than the harder veneers that have been flat cut.

It appears that your troubles might be manifold. A violent wood movement is starting the checks. The materials used in finishing are too hard to withstand this movement, so the film is broken directly over the void caused by the wood check.

One answer to your problem might be to change face veneers. Another answer is more logical. Have your finish material supplier review this finish and submit materials that have more elasticity. A slight shift in the formulation of all of the materials away from extreme hardness may give a more flexible film that has better adhesion and will "give" or "move" with the wood. When requesting such a change, you must realize that a tougher film of finish will be more difficult to sand and to rub.

The present materials are not being condemned because they might behave well under conditions other than yours.—*Mr. X.*

To Finish The Edges of Plywood, Particle Board

We have a problem that we are eager to solve. We manufacture desk tops that are about ⅞-in. thick when finished. These tops are plywood or particle wood, with plastic face and back. Our problem is to finish the edges without getting spray on the plastic top and bottom parts of the tops. Can you help us on this problem?—*E.G.I.*

One method of coating the edges of the desk tops is to stack 15 or 25 tops on a pallet, align them so that all edges are even, then place a cardboard or plywood caul or "blank" on

Metal Caskets at Aurora Casket Co.

finished in 1/4th previous time

with the help of driQuik INFRA-RED OVENS

Until recently, caskets were moved on pallets and air drying was the practice. In the modernized plant at Aurora, Ind., now, with automatic conveyors and driQuik ceramic type electric infra-red ovens: 1. the complete finishing operation, from base coat to final lacquer, takes much less space; 2. production was increased 20% with less labor cost; 3. quality was improved. Only driQuik, with its accurate temperature control (to within 1 degree of desired heat by turning a knob) can give the correct temperatures for each of the different coatings. No bulbs, quartz tubes, rods or sockets to burn out and need replacement. Write for FREE field demonstration in your plant.

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top of the stack. The loaded pallet is then advanced on a roller conveyor until it rests on a turntable in the spray booth. Immediately over the turntable is an air-operated clamp, the plunger of which comes down to rest upon the caul board to hold all of the tops firmly in position and close together.

The operator sprays the four sides of the stack. Pressure is then released and the loaded pallet is advanced by conveyor through a force-dry oven; or the coating may be air dried. An article on finishing lipped door edges with a picture of the equipment described above will be published sometime later in *Industrial Finishing*. The article will also deal with sanding the edges of plywood and particle board.

Should you wish to transfer wood grain to the top edges, this method may be used for applying the ground color coat. When the ground coat is dry, the wood grain may be rolled on by means of vertical application roller.—*Field Editor.*

To Repel Static Dust

I have just read Mr. P. C. Bardin's article in Dec. 1960 issue, pages 39-40 —the one entitled, "The Static From Sanding Attracted Dust; Remedy". Here I notice an operator using ionized air from an anti-static blow-off gun to blow away surface dust from a cabinet to be finished—and, at the same time, this blast of electrically charged air neutralizes static electricity on the surface of the cabinet to repel all dust; in other words to prevent more dust from alighting on the surface just cleaned.

We wonder if such an approach

For more data, circle 200 on colored card.

could be made to eliminate dust from freshly sprayed wet films?—*G. S.*

As you well know, dust must be removed from the surface of a cabinet or piece of furniture before any finishing material is applied by spray, curtain coater, or other methods. Dust cannot be removed from a wet film.

Smith Cabinet Co., where the installation is that I wrote about, has found that through the use of ionized air blow-off after sanding the sealer coat, no dust remains on the surface; that is to say, dust is not attracted to the surface before the pieces enter the top coat spray booth. The surfaces remain clean.

Sometime in the future, another article will be published in *Industrial Finishing*, which will deal with anti-static bars used over Nylon brushes to prevent an accumulation of dust in the brush. Then a combination of anti-static bars and jets of ionized air are used to thoroughly clean wood doors of sanding dust before they pass through a curtain coater, which is located only 4-ft. away from a sealer sanding operation.

The anti-static equipment referred to in these articles is advertised in this magazine.—*P. C. Bardin.*

Michigan Oven Co. Makes Three Appointments

Three key appointments at the Michigan Oven Co., are announced by LeRoy M. Gill, President.

Graham G. Barton, formerly Michigan sales representative for the company has been promoted to vice president. A graduate of Detroit Institute of Technology, he has been with the company since 1950.

Jerry E. Gibson replaces Barton as engineering sales representative in the Michigan area. He joined the firm in 1952 as a senior draftsman and served recently as chief estimator.

Noble Equipment Co., LaGrange, Ohio, will be sales representatives in the Ohio area, with C. E. Noble in charge.

For more data, circle 227 on colored card.

Wash Primers for Metal; Not for Fiberglass

THE USE OF A wash primer to serve as a corrosion resistant priming coat on metal, appears to be increasing. I have mentioned this material many times; however, it may be wise to reflect on its origin and subsequent use.

During World War II a need arose for providing a passivated surface on the steel hulls of ships, as a base for paint. It was found that vinyl butyral resin, which is soluble in alcohol, could be combined with an alcoholic phosphoric acid solution. Since chromate ions are known to provide an inhibiting barrier on metals, it was further discovered that using an insoluble type pigment, such as zinc tetroxychromate, provided an oxidation-reduction type material whereby phosphoric acid, in the presence of hexavalent and trivalent chromium, would form a passivated bonding surface on steel.

Soon after the war, the wash primer system was adopted for use on aluminum, and finally for magnesium, both of which had been nearly impossible to paint. Unfortunately, too much success can lead to many failures. Because the wash primer proved so successful on magnesium, many people felt that here was the answer to all adhesion problems.

A few years ago, when the use of titanium metal was at its peak, wash primers were then thought to provide the answer to the poor adhesion characteristics of this metal.

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However, titanium was inert to the action of phosphoric acid and, as a result, no bonding reaction could take place. After a few weeks time the phosphoric acid trapped between the metal and its vinyl butyral coating actually destroyed any remaining adhesion.

Today we find that a new structural material is causing adhesion difficulties. This time it is not a metal but a plastic—fiberglass. Fiberglass is smooth and "slick"; and if silicone release agents are used on the molds, the adhesion of a paint coating becomes nearly impossible. Surprisingly enough, some concerns are using wash primers in an attempt to obtain improved adhesion of paint on fiberglass.

It seems obvious that using a wash primer is not the answer for making paint adhere to fiberglass. Usually it is best to refrain from making such a blanket negative statement, but I have seen so many failures recently that even if somewhere one or two are successful it could not mitigate the many costly failures I have witnessed.

I believe that the safest procedure to follow would be to first scuff the surface of the fiberglass with fine abrasive paper and then wash it with solvent to remove all traces of silicone. Finally, select a primer that has been developed specifically for adhesion to fiberglass. A simple white fiberglass primer may be all that is required; it may save many headaches and refinishing jobs.

Wash primers have a distinct place in metal finishing. However, they will not supplant phosphate treatments, nor can they be used successfully on all surfaces. In their proper place, they can be used to good advantage; out of their place they can be troublesome and disappointing.—*X. Z.*

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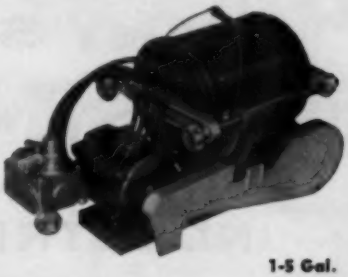


1-5 Gal. Capacity

Model 4 Bull Dog Shaker

Will condition paint to brushing consistency in one to five gallon cans without opening the can. Time required is from two to thirty minutes depending on the paint formulation and the length of time it has been on the shelf. Simply place the can in the saddle, tighten the end plates and flip the switch. Bull Dog will do the rest.

Grenier & Co., Inc.
13142 Rexford St., Blue Island, Illinois

For more data, circle 229 on colored card.

Steelwool in Different Forms and Grades

HAVE YOU ever given much thought to steelwool? It is available in many different grades and forms to suit every job.

A lot of thought and study are given to the selection of a finishing system, finishing materials, viscosities, and solid contents of the material, and to film thickness. You buy abrasive paper or cloth in belts or sheets by kind, type and grit size to suit your sanding needs, from presanding through sanding of sealer or prime coat to the rubbing room. If you sand or do shot blasting, the correct abrasive grit is selected for the type of surface and whatever soil or rust is to be removed.

But what about steelwool? One grade and one form of steelwool will not perform just the way you want it to for every job. Like any other abrasive, steelwool is available in many different grades and in a variety of forms. There is a suitable cutting grade for every purpose. Steelwool may be had in layer-built pads, in rolls, in reels or in bulk pound tubes.

It might be well to check up on what you are now using and the form in which it is purchased. Consult with your supplier for there is a big chance that he can offer some constructive suggestions that will result in better, faster work, and perhaps offer a saving in your methods of purchasing.—*J. T.*

Reliability may be defined as the probability that a device will function properly in the service and environment expected for the time intended.

Adheres to almost ANY SURFACE!

NEW NAZ-DAR IL SERIES

SCREEN PROCESS INDUSTRIAL LACQUER

Pyroxylin, coated metal surfaces, glass, wood, paper and cardboard displays, foil and most types of rigid plastics . . . all can be attractively screen process printed with the all-new NAZ-DAR IL Series Industrial Lacquer. Leaves a beautiful, extremely hard gloss finish. Force dries in seconds; air dries in 20 to 40 minutes. In 11 "Intensified Pigmentation" colors plus four transparencies.

NAZ DAR COMPANY

WRITE FOR COLOR CARDS, TECHNICAL DATA SHEET

The NAZ-DAR Company

Dept. IF-461 Milwaukee Avenue • Chicago 10, Illinois

For more data, circle 201 on colored card.

Corrosion Evaluation in Finished Metals

ONE OF THE primary functions of an organic coating, or for that matter inorganic coatings too, is its protective value against corrosion. Basically the real problem is to decide what constitutes corrosion. On a simple piece of iron or steel this is easily determined. It shows up as rust. On other metals corrosion may not be so easily recognized. It shows up as whiteness, cloudiness or pitting.

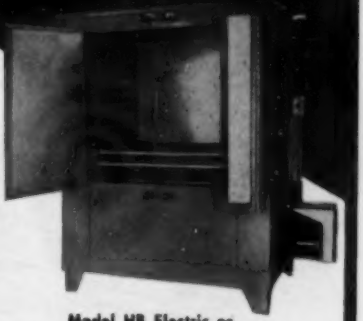
Recently I heard of one finisher who was nearly trapped into a guarantee on aluminum finishing, but fortunately he had enough experience to establish "ground rules" for corrosion judgment. In other words, what is aluminum corrosion? Is a mere dulling of the surface to be classed as finish failure? On the other hand, how severe must pitting or the appearance of a white surface be before the condition can be classed as corrosion? Both anodizing and alkaline etching put an oxide finish on an aluminum surface in order to protect the aluminum itself.

It must be clearly understood as to what purpose is being served by a protective coating. If a clear film is applied over a polished metal surface, obviously the purpose is to maintain the polished luster for as long a period as possible. In this case even slight dulling may be objectionable. On the other hand, a normal paint finish may become dull, yellow or get chalky, but as long as

Precise engineering and construction result in

UNIFORM HEAT

throughout the work space



- High velocity recirculating blowers
- Greater heat input
- Adjustable louvres for balanced airflow
- Superior heat seals

All combine to provide *excellent temperature uniformity* in these rugged cabinet ovens.

Model HB Electric or Gas Cabinet Oven

30 Standard Models

- Work space from 4.6 to 72.3 cubic feet
- Temperature ranges from 100 to 1250° F.
- Electronic combustion devices insure safety for gas fired models
- Indicating control instrument
- Factory tested

Other ovens from $121.50 up, including a complete line of laboratory, bench, cabinet, walk-in, and custom-built units.

Write for literature to help you select the right oven for your application

Specialists in Heat Process Equipment

GRIEVE-HENDRY CO.

1341 N. Elston Ave., Chicago 22, Ill.

For more data, circle 202 on colored card.

Add Solvent
AUTOMATICALLY
in Flow Coating, Dipping and other Finishing Processes
with NORCROSS VISCOSITY CONTROL

Provides more accurate control by eliminating human error.

Improves uniformity of coating.

Reduces labor and material costs.

Increases operating efficiency by eliminating waste.

Write for Illustrated Bulletin

NORCROSS CORPORATION

268 Newtonville Avenue
Newton 58, Mass., U.S.A.
Tel: DEcatur 2-3410

Representatives in Principal Cities and Foreign Countries

For more data, circle 230 on colored card.

with DRAWER-GLIDE

Prillaman Drawer-Glide Waxes penetrate deep into pores of the wood, thereby giving the drawers dimensional stability, a moisture-proof coating and lubricating the surfaces for easy sliding. They also beautify the wood and give surfaces a smooth, waxy feel. Supplied in color or colorless to be applied by spray, brush, sponge or dipping.

THE PRILLAMAN CO.
MARTINSVILLE, VIRGINIA

For more data, circle 231 on colored card.

the film integrity is maintained it can probably serve its purpose in protecting the metal from actual deterioration.

All of these basic ground rules must be established by the finisher and his company's customer. As is often the case, the finisher can easily become the whipping boy for any failure. In order to sidestep this, insofar as is possible, it becomes mandatory that a clear picture of corrosion protection objectives be drawn.

Corrosion can mean different things to different people. If a custom finishing shop is forced into a guarantee (this is unwise, but competition may make it necessary) then the management should be armed with the facts, and a definite understanding should be agreed upon, so that at a future date unjust liability claims may not develop.—*G. Norman.*

R-M Buys French Paint Firm

To better serve the paint requirements of automotive, appliance and industrial product manufacturers of the United States having affiliated companies in Europe, Rinshed-Mason Co., has announced the purchase of a controlling interest in Etablissements Weeks S. A. of France by Rinshed-Mason S. A. of Lausanne, Switzerland.

Custom Coating by Zegers, Inc.

"Custom Strip Coating of Aluminum and Steel," a new booklet available from Zegers, Inc., of Chicago, Ill., describes the company's exclusive, new process for applying decorative and protective finishes to metals.

The process—Zelite—is shown in step-by-step, fully-illustrated. Zelite finishes are available in clear and all standard colors with virtually no limit to the range of special colors and glosses that may be specified.

Copies of the booklet are available from Zegers, Inc., Zelite Division, 8090 S. Chicago Ave., Chicago 17, Illinois.

Masking Tapes — Their Selection and Use

PRODUCT painting and finishing specifications often call for two colors or a coated and uncoated portion on the same part or surface. In order to prevent overspray it is necessary to mask off part of the area.

Pressure sensitive tapes for masking are commonplace in every shop or plant concerned with finishing; but like everything else that is commonplace in the finishing room, it has become an abused process material.

Companies that manufacture the masking tapes have spent thousands of dollars on research to develop adhesives which meet nearly every requirement, but still there are definite "rules" which should be followed.

It goes without saying that masking tape should be selected for the job to be done. For example, if an adhesive was not designed for use in high heat areas it should not be used with baking enamels. Unfortunately, whoever is responsible for purchasing may not be fully aware of these special shop needs, and disastrous results may follow.

One problem, which today is a rather large one, concerns aircraft finishing. Nitrocellulose acrylic lacquers, under specification MIL-L-19537, are being used extensively as the top coat material. Because of difficulties in obtaining good flowout, this specification requires the use of a thinner under MIL-T-19544. This thinner contains about 20% cellosolve

A typical experience in the work-a-day lives of thousands of industries.
DOGGONE IT, PETE, THIS HAS GOT TO STOP!
Just came from heat-treat . . . Not a man wearing a respirator.
I'm not surprised, Jim. The men would rather breathe dust than wear heavy old respirators.
I know it. But I'm supposed to enforce safety rules. Oh, for a light, comfortable dust mask!
Here's what you want, man—The Flex-A-Foam Dust Mask—light as a feather!
It's sure light and comfortable, but can it do a man-size job?
Seen Purchasing yet? They're up on new developments.
It should. It filters non-toxic dust particles 100 times smaller than you can actually see.
Order a trial dozen, Bob. Maybe they'll wear these without continual prodding.
They're glad to wear Flex-A-Foam Dust Masks. Our troubles are over!
LATER
You're right! We should now equip the entire plant!
(quantity prices as low as $1.10)
Send Today
$1.45
(industrial price only)
Try low cost FLEX-A-FOAM and judge proof by performance
FLEXO PRODUCTS, INC.
Westlake, Ohio
For more data, circle 203 on colored card.

The New PEARL GLO

Synthetic Pearl Pigment
SUPERIOR TO NATURAL
at the Synthetic Price

TEST PEARL GLO (new synthetic *Patented essence), whether you spray, dip or incorporate, you'll find a saving in equipment & labor required. Use it on any sealed surface, plastic, metal, wood, leather, paper, etc. It may also be incorporated into Acrylic, Polyester, Vinyl, Polyethylene, etc. Gives a dazzling pearl finish at very low cost.

WRITE TODAY FOR A TRIAL SAMPLE OF PEARL GLO for a test run and full information. Specify application & choice of vehicle.

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SYNTHETIC DIVISION
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NATURAL DIVISION
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Maine

**Patent No. 2,807,858*

For more data, circle 232 on colored card.

HARDEX
CLEAR LACQUERS
for BRASS

- High Gloss — Spray or Dip.
- Air Dries to Bake Hardness.
- Amazing Adhesion on Polished Brass.
- Will not Blush-Tarnish nor Discolor.
- Hardens with Age.
- Remains Flexible.

HARDEX Lacquers are made for All Metal Surfaces.

Convince yourself — order Trial gallon at Drum price!

NEW ENGLAND
COATING WORKS, Inc.
Manufacturers of Quality Coatings
349 Bryant Ave. New York 59, N. Y.
Tel. DAyton 9-7800

For more data, circle 233 on colored card.

acetate. To those familiar with formulations and solvents use, it is well known that cellosolve acetate is one of the slowest evaporating solvents available. For this reason it is selected for the MIL-L-19537 system.

Acrylic resins, in general, are noted for their high solvent retention, thus coupling acrylic resins with the slow cellosolve acetate, produces a film which, though apparently dry, will retain nearly 10% of its solvent after a 30-day period.

The adhesives used on the modern pressure sensitive tapes exert a plasticizing effect on most lacquer films. Plasticizers, in addition to providing a flexible property in nitrocellulose, also exhibit a solvent type action.

Combining the three-fold effect of acrylic solvent retention, slow evaporating solvent, and plasticizing solvent adhesives—this combination can provide for some "interesting" though sad results, particularly when the tape is left exposed to ultra violet rays of the sun, or indoors for lengthy periods of possibly a week or more. In these cases it is not uncommon to find that the lacquer coating is removed with the masking tape.

It becomes evident therefore that in order to successfully use masking tapes without having to refinish and retouch large areas, it is essential that a three pronged offensive be launched. First, of course, the correct tape for the job must be selected. Your supplier is the best authority on this score.

Second, determine for yourself what minimum drying period is required before using tape. This step must be determined individually and cannot be generalized. Too many variables exist in drying times, particularly with slow solvents and resins with poor solvent release. Third, and this should always be observed, do not allow the tape to remain on

even one minute more than is absolutely necessary. If this plan is followed, in all probability the critical period will never be reached.

Taping is a simple procedure, but with today's finishes it is an exact science. Overlooking its importance can result in an uncalled for waste of labor and material.—*C. J. F.*

Your conveyor may need lubrication; better check it.

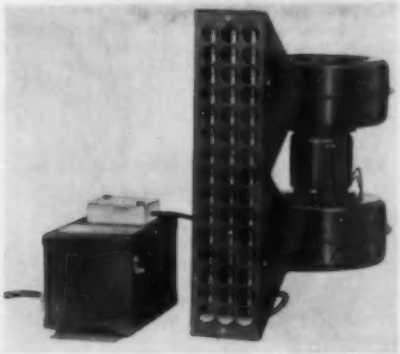
Know More About The Paint You Are Using

WHAT DO YOU actually know about the type and viscosity of the paint you are applying on your products? There must be some good reason why you are using the particular type of paint. What is it?

You choose a certain brand of cigars or cigarettes because of their taste. You prefer certain foods because of their flavor. You like certain sports or activities because they appeal to you. But with paint it is different. The paint or coating material you use is or should be chosen to suit your product, its quality, its use and its life expectancy.

You are not particularly interested in the formulation of the paint. For that you depend upon your supplier of finishing materials. However, you are interested in the end result. At least you should be sufficiently interested to find out the type and resin base of the material — and the correct viscosity at which it should be applied, and the proper atomizing and fluid pres-

Blow away STATIC PROBLEMS!



... with the Simco Aerostat Static Eliminator. Large, odd-shaped parts passing through the airstream of the Aerostat are instantly and completely neutralized. Effective at distances up to three feet. Use at molding stations, conveyor lines, etc. Write for facts.

the SIMCO company
920 Walnut Street, Lansdale, Pa.

For more data, circle 204 on colored card.

sures to use if it is sprayed.

The next step is to obtain a viscosity cup with which to test a specimen of the paint from the pressure tank, if it is a spray operation, or from the tanks of a dip or flowcoat operation. In the latter case, frequent tests should be run and solvent should be added and stirred in as required in order to maintain the correct viscosity.

Your supplier formulates the paint to suit your product. He prescribes the correct working viscosity, recommends the proper atomizing and fluid pressures to use in spraying the paint, and he is vitally interested in the results you obtain. Your supplier can give you directions, recommendations, and offer suggestions, but only you or your foreman can see that they are carried out. It's something to think about.—*D. Edwards.*

MORSE
VERTICAL DRUM TRUCK ROCK-A-DRUM

Picks up 55-gal. drums, rolls them over for side draining. Becomes a rugged stand on 3-in. wheels.

Morse Mfg. Co., Inc. 763 W. Manlius Street E. Syracuse, New York

For more data, circle 234 on colored card.

Reverse Roller Coating

IF YOU finish plywood panels, composition board or chipboard that requires a uniformly smooth appearance, you should be vitally interested in reverse roller coating. This operation fills in and levels off surface imperfections which otherwise would be visible in either natural wood finishes, painted or grain printed surfaces. Reverse roller coating is a simple, fast operation that fits well into any production line. Force drying is not necessary.

W. A. Kwozalla; Spraylat Corp.

Spraylat Corp., 1 Park Ave., New York 16, N. Y., announces the appointment of William A. Kwozalla as a sales representative in the midwest territory. He has the experience in coatings to offer assistance to any users of the company's spray-on strip-off protective coatings. He is located at 10 St. Jude Circle, Florence, Kentucky.

McCue General Manager For Drying Systems Co.

The appointment of L. F. McCue as general manager of Drying Systems Co., Chicago, Ill., is announced by R. G. Faverty, vice president of Thor Power Tool Co., Aurora, Ill. Drying systems is a division of the Thor firm. In his new assignment he will be in Drying Systems' Chicago office.

RECOVER your Paint Overspray

• REPROCESSED in our plant to conform to its original specification, in both physical and chemical properties, paint waste overspray or sludge can be used again in regular production at considerable savings. Our more than 21 years' experience is customers' guarantee of satisfaction.

PRIMERS—WHITES—COLORS—

• Write for complete details!

Mixed color sludges can be converted to primers.

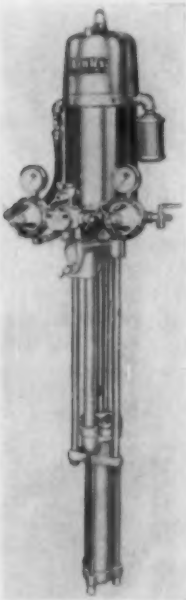
W. C. RICHARDS CO., 3108 W. Vermont St., Blue Island, Ill.
California Plant: 401 Julianna, Anaheim, Cal.

For more data, circle 205 on colored card.

● SUPPLIES
● MATERIALS
● EQUIPMENT

Binks Heavy Material Pump

A 10 to 1 ratio pump for handling heavy fluid materials has been developed by Binks Mfg. Co., 3120 Carroll Ave., Chicago 12, Ill., to meet the need for a powerful pump to handle mastics, roof coatings, sound deadeners, and similar materials. The pump also fills the need for an intermediate-range pump big enough for continuous, trouble-free service, yet not oversized for the job.



A newly designed air motor valve provides high pumping rates with minimum back pressure. Pump icing is also reduced through the new design. A muffler on the exhaust reduces noise.

The pump is air operated, and designed to deliver fluid on both the up and down pumping strokes, for smooth flow of material.

A surge control is available for spray applications. This control automatically stops the pump when spraying is stopped, prevents pressure buildup in the fluid hose, and eliminates the high pressure spurt when the spray gun is opened.

All models feature a built-in fluid pressure release. This feature releases pressure in the hose by allowing excess fluid to flow back into the container.

On models with surge control, the fluid pressure release operates automatically to compensate for lag when the spray gun is shut off. On models without the surge control, the fluid pressure release can be manually operated.

Other features of the new pump include a flow rate of 22½-oz. per cycle. For continuous duty, the maximum recommended delivery is 6-GPM. at 34 cycles per minute. For short runs to meet special situations, the pump can be operated at a maximum free delivery of 12 gpm. at 68 cycles per minute.

The pump is a compact unit, and can be used on original material containers. It can be ordered either as a clamp model or cover model.

For more data, circle 1 on colored card.

Turco Safety Solvent Features Controlled Evaporation

A new and improved safety solvent, Turco-Solv, is announced by Turco Products, Inc., 24600 S. Main St., Wilmington, Calif. The product now offers a combination of detergent action plus controlled evaporation. This built-in control allows the solvent to stay wet and working just long

enough to clean thoroughly in a minimum length of time. It also offers safety in that it reduces solvent vapors in the air, minimizing toxicity and flammability. Turco-Solv with controlled evaporation also reduces consumption of material and eliminates "touch-up" problems. It requries no hand-wiping, rinsing or further chemical processing, and is safe to use on all metals, paint and varnish. Turco-Solv contains a built-in detergent additive which assures quick, effective removal of all deposits of oil, grease, metallic particles, carbon dust and other soils.

For more data, circle 2 on colored card.

Narrow Width Strip Coater

A new heavy duty coater has been standardized for the Ross-Waldron Strip Coating Lines of the narrow or "siding" line width. This unit is of a size and design to produce coated strip of 12, 18, 24 and 30-in. widths, at speeds up to 200-ft. per minute.

The standard unit includes one top side and one bottom side coating head. The photo shows an additional "two roll" top side coating head which is optional.

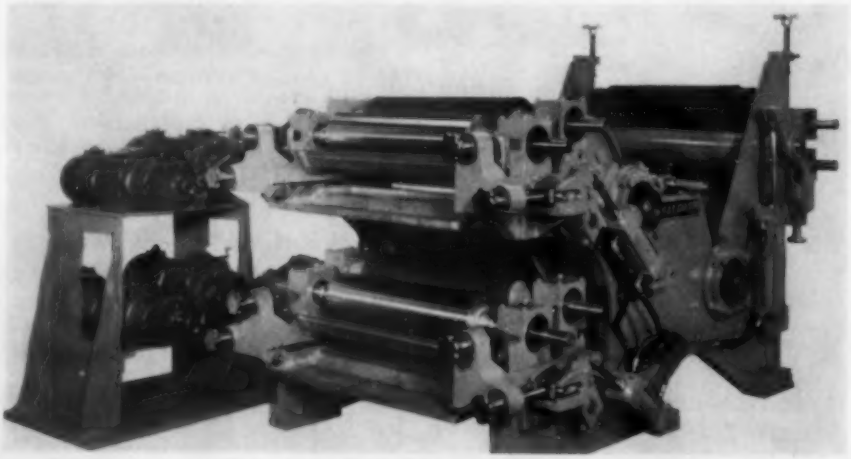
This precision coater will apply alkyds, acrylics and vinyls in a range of 10% to 90% solvents, to thicknesses of from .010-in. to .030-in. with excellent results. A product of Ross/Waldron Divisions, Midland-Ross Corp., Box 791, S. C., New Brunswick, New Jersey.

For more data, circle 3 on colored card.

An Improved Curing Agent for Solventless Coating Systems

A new and improved curing agent for solventless coating systems is now available from Ciba Products Corp., Fair Lawn, N. J. In combination with low viscosity epoxy resins, (e. g. Araldite 502), the new curing agent, Araldite DP-121A produces coating systems that can be applied in single-coat dry-film thicknesses of 5 to 10-mils. DP-121A epoxy systems have long pot life.

Finishes produced from these sys-



For coating one or both sides of endless sheet metal strip in widths of 12 to 30-in.

tems cure at room temperatures to hard, tough, flexible films, high in gloss and having good chemical resistance. In addition, since no solvents are present, fire hazards are minimized.

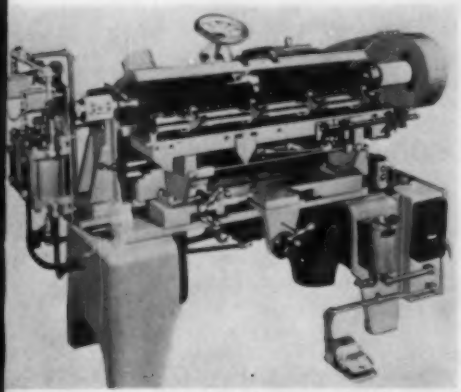
Flow control agents are deemed unnecessary in conjunction with Araldite DP-121A. Systems using the new curing agent exhibit improved levelling and gloss, eliminating pigment flocculation problems.

For more data, circle 4 on colored card.

Surface Finishing Equipment

The Clair Model No. 303 Table-Type Surface Finishing Machine has been in service on a wide diversification of small products for years.

Taking over where the No. 303 leaves off, the Model No. 405 is the Clair response to an insistent demand for a smaller and even more flexible table-type design with reversible roll as small as 1¾-in. diameter, table actuations adjustable to extremely high frequencies and super-sensitive contact pressure automatically variable over any predetermined increment of coverage.



It automatically polishes many bright metal products, such as jewelry, table ware and hardware.

Many small and intricate shapes, previously processed manually, can now be batch finished mechanically, i.e., industrial jewelry, decorative hardware, hand tools, tableware, etc. A product of Clair Mfg. Co., Inc., Olean, New York.

For more data, circle 5 on colored card.

Small Water-Wash Spray Booths Offer Economy

A new line of economy water-wash paint spray booths, designed to give production-line economy and efficiency on short runs is announced by Despatch Oven Co., 619 S. E. 8th St., Minneapolis 14, Minn.

A Despatch Thrift-Flow spray booth.

The new line, named Thrift-Flow, uses nozzle sprays with overlapping patterns to achieve high-speed removal of paint pigments and volatiles. Panel-type construction and other features found previously only on more expensive equipment are incorporated in the line.

Use of these booths will allow small and medium sized finishing departments production facilities comparable to those of large operations. Use of Despatch Thrift-Flow paint spray booths will therefore result in new production, safety and employe health records. [*To page 118*]

The booths are available in a variety of sizes, and with optional explosion-proof motors, motor starters, float valves, lights, conveyors and exhaust stacks.

For more data, circle 6 on colored card.

Airless Spray Painting Unit For Small Containers

A new 5-gallon airless spray unit for one to 5-gallon containers, is announced by Gray Co., Inc., 1066 Sibley St. N. E., Minneapolis 13, Minn. The 46-lb. "Monark" unit has a large capacity pump with full stroke.

Fits on one to 5-gallon containers.

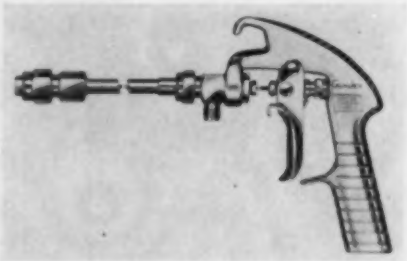
Designed for production work, the Monark unit incorporates an instant-latch cover for fast color change-over and easy carrying.

The new unit can handle anything from protective coatings, water-base paints and lacquers, to precise final finishes when used with the Graco "Golden" Gun and spray tips. The unit comes equipped with an air-operated agitator.

For more data, circle 7 on colored card.

Airless Extension Spray Gun

Spraying Systems Co., 3240 Randolph St., Bellwood, Ill., offers a new line of No. 22 series GunJet spray guns to provide long reach with a drip-free shut-off. These GunJets for airless paint spraying are built in a choice of four models with extension lengths of 8, 18, 24 and 36-in. In each model the valve stem extends the entire length of the extension



Extension guns have drip-free shut-off.

tube. The shut-off needle is positioned immediately behind the nozzle orifice for positive, drip free shut-off. They are light in weight and balanced for use in airless paint spraying and coating at high pressures.

For more data, circle 8 on colored card.

Non-Foaming Spray Wash Cleaner

Sprean 66, a powdered, alkaline product for spray wash cleaning steel, copper, brass, and aluminum, has been introduced by Enthone, Inc., New Haven, Conn., subsidiary of American Smelting & Refining Co. The new product is formulated to provide excellent detergency, eliminate excessive foaming, inhibit steel parts and equipment from rusting, and prevent scale formation on spray nozzles and heating coils.

Sprean 66 is recommended for use

at 2 to 4 oz. per gallon of water at 140° to 200°F. in all types of metal washing machines, including pressure spray machines, spiral-type washers, paddle wheel washers, and agitated basket-type machines. It is designed to remove oils, drawing compounds, solid dirt, and shop soil.

The rust inhibiting properties of Sprean 66 provide protection to cleaned steel parts during temporary storage. The degree of rust protection can be increased by adding ½-oz. per gallon of Sprean 66 to the final rinse stage of the washing machine.

For more data, circle 9 on colored card.

Screen Cradle for Accurate Silk Screen Printing

A new precision-made, patented screen cradle with ball bearing action is said to insure accurate register in short-run silk screen printing. When the screen is in printing position, there is no play in any direction. The cradle is quickly adjustable to hold any size screen from 6 x 6-in. to the largest practical sizes.

It is so designed that the screen is level in the raised position as well as in the printing position, thus preventing the paint from running off the back of the screen.

For fast accurate printing of small jobs.

Suggested uses for this cradle, known as the Sutliff Screen Cradle, are for process work, circuit printing, name plates, instruction panels, posters and any other jobs where accuracy and high grade printing are required but where quantities are too small to justify setting up the job on automatic presses. A product of C. G. Sutliff Co., 106-48 Benedict Ave., Syracuse 5, New York.

For more data, circle 10 on colored card.

Painted Aluminum That Retains The Metal's Reflective Luster

A technique for applying paint to aluminum which retains most of the metal's reflective luster has been developed for interior trim applications according to Reynolds Metals Co., 2500 S. 3rd St., Louisville 1, Ky.

A new line of decorative strip, marketed under the name "Reflective Colorweld," now is available as a result of the technique.

Reflective Colorweld retains most of aluminum's natural luster. On bright sheet it has a mirror-like quality superior to color anodizing. On all other surfaces, Reflective Colorweld is as bright as color anodizing. Heretofore color anodizing has been the best technique for producing bright, colorful finishes on aluminum.

Another important feature is that Reflective Colorweld may be formed with less danger of damaging the finish than when using anodized aluminum. It will fabricate into end products as easily as organic finishes such as Colorweld.

This technique was developed by the Reynolds product development division after two years of extensive research. The new formula for the transparent paint resulted from work done by Reynolds, working with the supplier of the paint, a firm in Louisville, Kentucky.

For more data, circle 11 on colored card.

New Silicone Mold Spray Allows Easy Painting

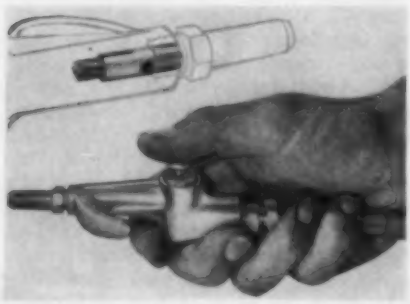
Immediate marking of parts with paint, ink, grease pencil or chalk is possible with new Sprayon No. 207 Paintable Silicone Mold Release, according to the maker, Industrial Supply Division, Sprayon Products, Inc., 2075 E. 65th St., Cleveland 3, Ohio. Packed in a 16-oz. aerosol can, the paintable mold release is part of Sprayon's line of 49 maintenance and production aids in self-spraying containers.

The new mold spray also allows easier painting of parts. Its "quick" release formula avoids the troubles of most silicone preparations, which can cause "fish eyes" and poor adherence of the paint coating.

For more data, circle 12 on colored card.

Industrial Blow Gun Regulates Maximum Air Velocity

The new Foster industrial blow gun is push-button-triggered to control air delivery, ranging from a tiny whisper to a strong blast. An optional "Needle-Nose" valve (see inset) in the gun's nozzle regulates the maximum volume of air which can be delivered. This adjustable, screw-type valve not only saves air with a stop to over-metering, but increases safety by helping to prevent particles from being blown outside the immediate vicinity of the operation.



It's adjustable to regulate the "blowing air" from a tiny whisper to a strong blast.

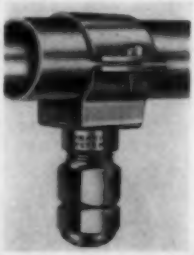
Shavings, dirt, lubricants and the finest dust particles can be cleaned from tools, parts and various other surfaces.

Called the "Handy-Air", this new blow gun features its own hanging hook, and a light, durable die-cast construction. Both body and nozzle are leak-resistant and rustproof. All parts—and most important, the seals —are inexpensive and easily replaced. The gun attaches to any standard rubber or plastic air hose. A product of Foster Mfg. Co., Inc., Dept. IG-26, 2850 Gravois, St. Louis, Mo.

For more data, circle 13 on colored card.

Split-Eyelet Connectors For Piping and Tubing

In installations requiring fittings for 1¼, 1½ and 2-in. piping or equivalent size tubing, these new Spraying Systems Co. No. 8370 Split-Eyelet Connectors can frequently offer savings in overall cost. Because they are easily and quickly installed to continuing or un-cut pipe or tube lengths, installation time and fitting costs are greatly reduced.



These patented Split-Eyelet Connectors (Patent No. 2,946,518) are used in place of reducer Tees, and to connect such parts as spray nozzles, gauges, and hose nozzles. The split-clamp is made of cadmium plated, heavy-gauge steel or of stainless steel. The bodies provide a ½-in.

NPT female outlet and are made in choice of brass and stainless steel.

The Connectors are mounted simply by drilling a 11/16-in. diameter hole in the pipe or tubing and placing the connector in position. Twin-bolt compression of the clamp, in combination with a special Buna-N gasket, provides a leak-proof seal. Connectors may be used for liquids and gases up to pressures of 150-psi. Use of the connectors eliminates need of cutting, threading and brazing operations at connection points and materially reduces the need for such fittings as tees and unions in any installation. A product of Spraying Systems Co., 3240 Randolph St., Bellwood, Illinois.

For more data, circle 14 on colored card.

New Dry-Type Air Filter

A new dry-type air filter, the AAF Dri-Pak has been developed to meet the demand for a unit filter of high efficiency, low resistance, compactness and unusual dust-holding capacity. It can be used in industrial ventilating systems, or in central air conditioning systems.

The new filter is disposable, light weight and requires little storage space. Each 24 x 24-in. cartridge in the folded state is 4-in. deep and weighs 4-lbs. The American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Kentucky.

For more data, circle 15 on colored card.

New Durable Coatings For Bright Smooth Metal

Two coatings for metal protection are announced by Bee Chemical Co., 2700 E. 170th St., Lansing, Illinois.

The new products, Lacqua M-802 and Lacqua M-804, are said to equal the properties of quality lacquers and enamels without any fire hazards. These products, applied by dipping, are easy to handle, yet they afford excellent protection for all plated and bare metals.

Lacqua M-802 is a clear coating designed for metal finishers who utilize force-drying for coated parts. It can be cured as low as 140° F. to 150° F. for ten minutes, or as high as 275° F. for seven minutes.

Lacqua M-804 is applicable to baking systems and is fast curing. It will cure in 15 minutes at 275° F.

ASTM salt spray tests, conducted on brass-plated steel panels coated with M-804 show no failure in center of panels after 96 hours' exposure. Its adhesion, flexibility and solvent resistance are rated excellent. The coating withstands 1000 hours moisture resistance, the company reports, at 100% relative humidity and 110° F. with atomizer built into cabinet to accelerate the severity of the test.

For more data, circle 16 on colored card.

Cleans and Phosphatizes Large Metal Products

Kelite Corp., 81 Industrial Rd., Berkeley Heights, N. J., manufacturer of metal processing chemicals, has published an 8-page, illustrated report on its Mark IV combination steam cleaning-phosphatizing equipment.

The Mark IV solves the problem of preparing large structures for painting—assemblies that are too large to be processed through tanks or power washers.

It discharges 600 gallons per hour at pressures of 160 to 190-psi at temperatures of 140° to 180° F. The resultant phosphate coating protects surfaces against rusting prior to painting, acts as a bonding surface for paint and prevents under-paint corrosion.

For more data, circle 17 on colored card.

Poly-Epoxy Coatings Inhibit Corrosion

If you have a real corrosion problem you may find the answer in Nu-Da poly-epoxy coatings. These materials produce 6-mils dry film thickness and they are self curing. They may be applied over damp metals or masonry and are unaffected by oils, fats, grease and gasoline. Also, they offer maximum resistance to water, steam, alkalies, brine and most acids. A product of Indianapolis Paint & Color Co., 640 N. Capitol Ave., Indianapolis 6, Indiana.

For more data, circle 18 on colored card.

Hot Spray Unit; Spee-Flo Co.'s Chieftain Series II

A new, completely self-contained hot spray unit is offered by the Spee-Flo Co., 6614 Harrisburg Blvd., Houston 11, Texas. The Chieftain Series II provides a full range of temperature control for one or two guns and for hose lengths from 10 to 60-ft.

Portable, or for stationary installation.

The Chieftain maintains a uniform selected temperature control at the gun, producing a 2-coat requirement with a single spraying pass. Speed of application is raised 50%, according to the manufacturer, with an improved quality control on film deposit, critical edges, and elimination of runs and sags.

The system features a double action divorced design pump which is suited for all types of materials from clear to highly abrasive. It is quipped with the newly patented Spee-Flo recirculating assembly which allows constant recirculation of the heated material without return to the main supply.

Temperature control for the Chieftain is accomplished with the Spee-Flo Pressurematic heater. It may be optionally equipped with an external temperature control.

The unit is available in fixed or mobile models and is designed for use in industrial spray booths, large spray areas, or for field maintenance work.

For more data, circle 19 on colored card.

One-Step Metal Cleaner And Conditioner

Turco W. O. No. 1 is specifically designed to simplify the pre-paint treatment of metal surfaces. It cleans, passivates and removes corrosion in one step, and removes and prevents light oxides and corrosion quickly and easily. In the same operation, it produces a slightly porous surface which absorbs primer, providing a firm base for paint. It may be applied by brushing, spraying or swabbing. No dismantling of large equipment for application is required. A product of Turco Products, Inc., 24600 S. Main St., Wilmington, Calif.

For more data, circle 20 on colored card.

For Your Convenience

Use INDUSTRIAL FINISHING magazine's "Reader Service" return cards to obtain further information on products described and illustrated in the "Materials; Supplies; Equipment" section which precedes this page; also to receive further information on what manufacturers have to offer—literature, products, supplies, services, etc., as mentioned on the following pages.

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Industrial FINISHING

April, 1961, Issue

READER SERVICE DEPARTMENT

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Some of the returned cards we receive are not filled in correctly—and we cannot read a few of the hand written names and addresses. Before returning a card, please check to see if it is marked correctly—and legibly, including your name and address. Thank you.—*Editor.*

Monotex Aluminum Enamel, made with Alcoa pigments, resists extremes of weather, erosion of time, mars and scratches. A good finish for tool and tackle boxes which are subjected to the elements. Alcoa pigments supplied by Aluminum Co. of America, Alcoa Bldg., Pittsburgh 19, Penna.

For more data, circle 28 on colored card.

Guardsman Cleaning Polish, and Guardsman finishes for fine furniture, give beauty and individuality to your furniture line. Let a Guardsman salesman help you select the proper finish for your particular line of fine furniture. Grand Rapids Varnish Corp., Grand Rapids, Michigan.

For more data, circle 29 on colored card.

Laboratory Ovens for drying, curing, and aging, are available in 500°, 650°, 850° and 1000° Models. Gas or electricity may be used for heating. Free bulletin 203-4HD on Laboratory Ovens is available. Despatch Oven Co., 619 S.E. 8th St., Minneapolis 14, Minn.

For more data, circle 30 on colored card.

Plywood Panel Finishing can be done at high speed with a Koch engineered system. Can be engineered for semi or complete automation and equipped to finish flat panels by any process sequence; can be a chain or belt conveyor, a wicket or a stacking conveyor. A Koch engineer will survey your requirements without obligation. Shingles, panels, siding, tile, etc., can be finished with a Koch engineered system.

For more data, circle 31 on colored card.

Butyrate Topcoat Lacquers are water-white and non-yellowing; are compatible with the graining inks over which they are used. Butyrate lacquers do not discolor upon aging and can be applied easily with conventional spray equipment or high speed roll-coating machines. Can be force-dried in minutes by infrared or convection ovens. Eastman Chemical Products, Inc., Kingsport, Tenn.

For more data, circle 32 on colored card.

Large Knife Heater, for certain operations requiring a larger (wider or thicker tool or knife than the conventional patching knife) is now available from The Op-Al Electric & Mfg. Co., 3133 Martindale Ave., Indianapolis 5, Indiana. Is designed for continuous operation on production lines. Available with or without a thermostat, to 700°F.

For more data, circle 33 on colored card.

Hammermark, Multakolor, Wrinkles, pearlescent and epoxy finishes are just a few of the many United Finishes available. No matter what your problem or product, United Lacquer Mfg. Corp., Linden, N. J., can supply specific information, free samples and color cards. Free technical consultation service available on request.

For more data, circle 34 on colored card.

Ovens in 30 Standard Models provide uniform heat throughout the work space. Ovens available in electric or gas cabinet types. Laboratory bench type, walk-in and custom-built ovens can be engineered and constructed. Grieve-Hendry Co., 1341 N. Elston Ave., Chicago 22, Ill.

For more data, circle 35 on colored card.

City..... Zone..... State.....

Aerostat Static Eliminator permits large, odd-shaped parts to pass through the airstream of the Aerostat and instantly become completely neutralized. Can be effective at distances up to 3-ft. Removes static effectively at molding stations, conveyor lines, etc. The Simco Co., 920 Walnut St., Lansdale, Penna.

For more data, circle 36 on colored card.

Combination Infra-Red and Convection Systems, by Burdett Mfg. Co., 4920 S. Monitor Ave., Chicago 38, Ill., can be engineered for any product that needs to be heated, treated or dried. Can be integrated into a complete system. Burdett's production size pilot facilities are available for your product development and process simulation purposes.

For more data, circle 37 on colored card.

Polymerin Finish by Interchemical Corp., Finishes Divn., 224 McWhorter St., Newark 5, N. J., is durable and has resistance to impact, abrasion, perspiration, alkalies and detergents. Office equipment finished in Polymerin stands the tests of time.

For more data, circle 38 on colored card.

Nuvat Heavy-Duty Vat Cleaner won't form scum. Can be used for either soak or barrel cleaning of steel, copper, brass, nickel or magnesium. Displaces and dissolves soils conventional cleaners won't touch; removes oils, polishing and buffing compounds, grease, shop dirt and encrusted deposits. A Wyandotte representative can demonstrate the advantages of Nuvat. Wyandotte Chemicals, J. P. Ford Divn., Wyandotte, Mich.

For more data, circle 39 on colored card.

Durance Catalyzed Finishes is a series of chemically reacted finishes including polyesters, epoxies and polyurethanes. Can be used on wood furniture, masonry, metal, fabrics, rubber, paper, patent leather. Durane folder is available. Raffi and Swanson, Inc., 100 Eames St., Wilmington, Mass.

For more data, circle 40 on colored card.

"Wepco" Conveyor Hooks can be supplied in all sizes. Hooks are made of hi-carbon spring steel or cold drawn steel in standard sizes; can be used then thrown away or can be cleaned and used again. Hooks can be made on special order or supplied from Wepco's adequate stock. W. E. Pipkorn Mfg., Co., Inc., 221 W. County Road D, St. Paul 12, Minn.

For more data, circle 41 on colored card.

White Baking Enamels are just one of the many "tailor-made" finishes available from Gilman Paint & Varnish Co., Chattanooga, Tenn. All types of finishes for metal can be formulated for your specific problems and products.

For more data, circle 42 on colored card.

Screen Process Industrial Lacquers, give a hard gloss finish, force-dries in seconds, air-dries in 20 to 40 minutes. Available in 11 colors, plus four transparencies. Naz-Dar IL lacquers can be used for silk screening glass, wood, metal, paper, cardboard and foil. Color cards and technical data sheet available. The Naz-Dar Co., Dept. IF-461 Milwaukee Ave., Chicago 10, Ill.

For more data, circle 43 on colored card.

Spray Nozzle Accessories such as split-eyelet connectors, adjustable joints, and line strainers are available from Spraying Systems Co., 3240 Randolph St., Bellwood, Ill. Complete spray nozzle information is in catalog 24. Bulletins 93, 97 and 94 give information on the various spray nozzle accessories.

For more data, circle 44 on colored card.

Interlox Phosphate Coating locks your finish to the metal. Interlox gives good appearance, adhesion and corrosion resistance; no streaks, stains, powdery residue or flast rusting. Baths are unusually long lived and require less replenishment and control. Is available in spray or immersion type, single or multiple stage. Northwest Chemical Co., 9310 Roselawn, Detroit 4, Mich.

For more data, circle 45 on colored card.

Wood Grain Reproducing Equipment, in 60 different types and models, is available from Schmutz Mfg. Co., 1600 W. Main St., Louisville 3, Ky. Machines for printing metal, masonite or wood cabinets automatically. Visit the plant, see machines under construction and doing actual work on the test floor. Roller coaters also available.

For more data, circle 46 on colored card.

Epoxy Finishes, lacquers, vinyls, synthetics, butyrate coatings and flow coatings are just a few of the many finishes available from J. Landau & Co., Inc., Carlstadt, N. J. Whatever your purpose or problem Landau everlasting finishes give you fast action.

For more data, circle 47 on colored card.

Solvents and Chemicals, from bulk shipments to drum lots are available from 21 plants located conveniently throughout the United States. These on-the-spot facilities mean faster delivery, economical prices and helpful services. Contact the member of Solvents & Chemicals Group nearest you for quick service. The Solvents and Chemicals Group, 2450 W. Flournoy St., Chicago 12, Ill.

For more data, circle 48 on colored card.

Multi-Color Wood Grain Printing, with Model MC-H158, gives a true-to-life appearance. This particular model prints two perfectly-registered colors simultaneously. Other models are available for every purpose. Hamant Tool Co., Inc., 502 Warren St., Dayton 9, Ohio.

For more data, circle 49 on colored card.

Drum Rollers for blending pigments, mixing paints and agitating solutions are available from U. S. Stoneware, Akron 9, Ohio. Bulletin DM-290 contains details on the full "U.S." drum roller line. Equipment for 5-gallon pails to 55-gallon drums is available.

For more data, circle 50 on colored card.

Sunstop Lacquer, a colorless lacquer that stays colorless. Is quickly and easily applied by conventional techniques and equipment. Air dries in minutes. Sunstop gives protection against fading, yellowing and staining. Formulations for both wood or metal are available. Stays crystal clear. Details and a demonstration available. Gilbert Spruance Co., Philadelphia 34, Penna.

For more data, circle 51 on colored card.

Restore Paint to its original consistency without opening the container, whether in ¼-pint cans or in 55-gallon drums. Time required is only 2-minutes per gallon. Full information from Miracle Paint Rejuvenator Co., 128 E. 10th St., St. Paul.

For more data, circle 52 on colored card.

"Gripalloy" Primer for 25 Metals is available in black and colors; excellent adhesion . . . and resistance to salt spray and solvents. Cuts pre-treatment costs in half. Tenax Finishing Products Co., 390 Adams St., Newark 5, N. J.

For more data, circle 53 on colored card.

TAKE OFF

IS WHAT YOU GET WHEN YOU USE

Electro NON-FLAMMABLE

NO CURRENT
NO HEAT Cold Stripper

All walks of industry from Coast to Coast use ELECTRO COLD STRIPPER—consider it to be indispensable to their finishing system.

If you have a PAINT STRIPPING problem and want a quick economical answer write for literature and free testing sample.

ALLIED FINISHING SPECIALTIES CO.

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For more data, circle 207 on colored card.

Formulated Finishes by Randolph Products Co., Carlstadt, N. J., can be for bowling pins, typewriters, furniture, toys, plastics, panelboard, etc. Exactly-right industrial coatings by Randolph give your product sales appeal. Finishing problems are Randolph's specialty.

For more data, circle 54 on colored card.

Hot Airless Spray System by Nordson Corporation, Amherst, Ohio, is said to cut paint waste by old-fashioned spray systems 25% or more. No air is used for atomization so overspray is cut to a bare minimum. Send for the Nordson brochure, free.

For more data, circle 55 on colored card.

Steinemann Coater applies all finishes uniformly to practically any size or shape of product. There is no waste; unused material is recovered by a recirculating system. For additional information write Wilco Machine Works, Inc., Municipal Airport, P. O. Box 3897, Memphis 14, Tennessee.

For more data, circle 56 on colored card.

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P. O. BOX 631 — TOCCOA, GEORGIA

For more data, circle 235 on colored card.

One-Coat, Air-Dry Enamel endures rough service and can be applied in a single coat right to the bare steel. No priming or baking is necessary; can be applied by spraying or dipping. Cosden formulating experience can help meet your particular requirements. Cosden Paint Co., Beverly, New Jersey.

For more data, circle 57 on colored card.

Adhesives, Cements, Strippers, lacquer room specialties, buffing compositions, and polishing compounds are a few of the production line finishes by Lea Mfg. Co., 16 Cherry Ave., Waterbury 20, Conn. Room temperature strippers for enamels and lacquers and high-speed strippers for synthetic enamels are a specialty.

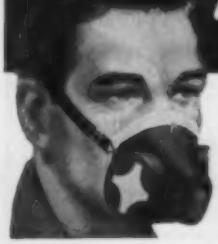
For more data, circle 58 on colored card.

Portable Airless Spray Unit, Model 1721, is non-tiltable with a 5-gal. reservoir, and is complete with spray gun, hose, tilt-in pump elevator, agitator and accessories. Gives spray coating wider application with little overspray or bounce-back and there is no need for elaborate ventilating systems. Bulletin 404R gives complete information on the portable "No-Air" Dyna-Spray. Lincoln Engineering Co., 4010 Goodfellow Blvd., St. Louis.

For more data, circle 59 on colored card.

Pinpoint Painting, with split-second timing, is possible with the DeVilbiss automatic spray, gun angles, spray patterns and spraying duration, all precisely set for exact coverage and absolutely uniform results hour after hour on the production line. The DeVilbiss representative can show you how automatic spray speeds application, saves paint, cuts finishing costs. The DeVilbiss Co., Toledo 1, Ohio.

For more data, circle 60 on colored card.



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DUPOR No. 4 RESPIRATOR has big double filters for easy breathing and greatest filtration! Soft rubber face mask gives airtight fit. Patented DUPOR valves bring in clean air—throw off breathed air! Weight 4 oz. Economical! Costs only **$2.25** postpaid. Order Now!

H. S. COVER CO., Dept. 410, South Bend 14, Ind.

For more data, circle 208 on colored card.

Infrared Ovens by Fostoria Corp., Fostoria, Ohio, bake finishes fast in, on, over, under and around, regardless of product shape. Fostoria ovens are designed to direct heat to all surfaces evenly and quickly. Give us a brief description of your type of manufacturing and Fostoria will send pertinent information as to how Infrared can benefit you.

For more data, circle 61 on colored card.

"Spex" Multicolor One-Coat Finish by V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39, Ill., provides a combination of two or more harmonizing colors in one coat with standard spray equipment. For finishing wood, metal, plastic, brick, concrete and all types of composition board. Dries like lacquer. Hides surface irregularities. Color card showing assortment of sprayed (not photographed) multi-color combinations available.

For more data, circle 62 on colored card.

Tack Cloth for Wiping Dust. It's available in different meshes, in envelopes, rolls or bulk. Lint free, wax free; no danger of spontaneous combustion. Bond Chemical Products Co., 2641 N. Clybourn Ave., Chicago 14, Illinois.

For more data, circle 63 on colored card.

Perfex Satin Finishes need no rubbing. The "flat" finish has a rubbed appearance and waxed feel. Is quick setting, drying and is water and liquor proof. Available in a full range of sheens. Eliminates costly rubbing operation, yet gives a rubbed-effect finish. Perfection Paint & Color Co., Indianapolis 2, Indiana.

For more data, circle 64 on colored card.

Dupor No. 4 Respirator has double filters for easy breathing and greatest filtration of paint spray, dust and fumes. Soft rubber face mask gives an air tight fit. Patented Dupor valves bring in clean air and throw off breathed air. Weighs only 4-oz. H. S. Cover Co., P. O. Box 2508, South Bend 14, Indiana.

For more data, circle 65 on colored card.

"Polymac" Pure Polyester Finish is a burn-proof durable low-cost finish. Can be sprayed or curtain-coated; is print free in 50 minutes. Can be rubbed to mirror-gloss, semi-gloss or dull sheen and has glass-like hardness. Can stand severe usage. Polymac finished panels will be sent on request. Lawrence-McFadden Co., 7430 State Road, Philadelphia 36, Penna.

For more data, circle 66 on colored card.

Epoxy Resin Coatings known as "Poly-Ep" protective and decorative coatings for application to metals, plastics, wood, etc., are fully described in a new technical bulletin available free of charge. D. J. Peterson Co., Inc., Box 181, Sheboygan, Wisconsin.

For more data, circle 67 on colored card.

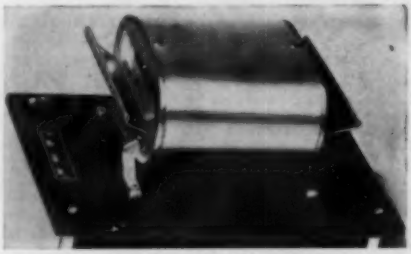
Paint Strainers for straining lacquers, enamels, paints or varnishes. Made of heavy paper stock with cloth insets in coarse, medium, fine and extra fine mesh, 6-in. in diameter. Louis M. Gerson Co., Box 175A, Mattapan, Mass.

For more data, circle 68 on colored card.

IDEAL TACK RAGS
FOR A
PERFECT FINISH
Bulk, Bagged and Rolls
IDEAL CHEMICAL COMPANY
1499 Dean Drive
South Euclid 21, Ohio

For more data, circle 236 on colored card.

New Large Knife Heater



For certain operations requiring a larger (wider or thicker) tool or knife than the conventional patching knife, this new heavy duty heater will take a tool with a blade up to 3½-in. wide.

It is designed for continuous operation on production lines—rated 350 watts and can be furnished for 115-volts or 230-volts. Can also be furnished with a thermostat to 700° F.

OPAL
THE OP-AL ELECTRIC AND MANUFACTURING COMPANY
3133 MARTINDALE AVE.
INDIANAPOLIS 5, INDIANA

For more data, circle 237 on colored card.

Finishes Consultant, with no supplier affiliations, can give you a 4-day "consulting package." Complete process analysis with detailed equipment specifications can be given. E. A. Zahn, 3502 Hillsboro Court, Louisville 7, Kentucky.

For more data, circle 69 on colored card.

Kinetic-Kurtain Coater by Gasway Corp., 6463 N. Ravenswood Ave., Chicago 26, Ill., helps improve finish, save material and increase production. Coater provides a precisely metered gravity curtain of material that gives an ultra-smooth coating film deposit at high speeds. Many standard paints and finishes can be applied. Booklet gives details, specifications and recommendations.

For more data, circle 70 on colored card.

Sun Ray No. 0000 Steel Wool is surpassingly soft, the finest grade anyone can make. A rubdown with its resilient strands imparts a rich, mellow smoothness to all fine furniture. Sun Ray steel wool is made in a variety of forms and grades for every job; layer built pads, rolls, reels and bulk pound tubes. Write on your letterhead for a free generous sample. The Williams Co., London, Ohio.

For more data, circle 71 on colored card.

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A service to aid industry in producing longer-lasting and better-looking products. Quick predetermination of durability and permanency by actual exposure test in South Florida. Write us today for full information.
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For more data, circle 238 on colored card.

Aerosol Finishes — custom-loaded by Sprayon—never vary in color or performance, as they are tested and proved in Sprayon's quality-control laboratory where paint chemists and paint technicians make sure of this fact. All test data, materials and samples are dated coded and filed for future reference. Sprayon Products, Inc., 2605 E. 65th St., Cleveland 3, Ohio.

For more data, circle 72 on colored card.

"Pearl Glo" Synthetic Pearl Pigment can be sprayed or dipped on any sealed surface of plastic, metal, wood, leather, paper, etc. Can also be incorporated into acrylics, polyester, vinyl, etc. Gives a pearl finish at low cost. Sample available. Specify application and choice of vehicle. Argenta Products Co., 74-80 Forrest St., Jersey City, New Jersey.

For more data, circle 73 on colored card.

"Therm-O-Spray Hot Spray Equipment has no pump, nothing to wear out; no gasket or packing to leak; heat transfer is synchronized with spraying; no overheating of paint, no clogging; preheated atomizing air, therefore no water condensation. Additional units can be added as needed. Thermospray Co., Inc., 60 E. 42nd St., New York 17, N. Y.

For more data, circle 74 on colored card.

"Dulux 100 Enamel" resists blistering, chipping and cracking despite hard wear and temperature extremes. By actual tests, Dulux 100 holds its luster three times longer than former outside enamels. Is hard, tough and mar-resistant. Recommended for vending machines for outdoor use. E. I. du Pont de Nemours & Co., Finishes Division, 2502 Nemours Bldg., Wilmington 98, Dela.

For more data, circle 75 on colored card.

NOW, everything you want in a curtain coater

Steinemann Pressure Curtain COATER

From the company with the world's greatest experience—a completely redesigned machine with the greatest flexibility and most wanted features. It will pay you to inquire about details.

wilco machine works, inc.

WH 8-4555 Box 3897 IF-4 Memphis, Tenn.

For more data, circle 209 on colored card.

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BAKE OR AIR DRY
For Your Product Made of Metal, Plastic, Wood or Glass,
Write for sample, Specify application; choice of vehicle.
RONA PEARL CORPORATION
A Division of Rona Laboratories, Inc.
East 21st and East 22nd Sts., Bayonne 2, N. J.
Plants: Maine New Jersey Canada

For more data, circle 210 on colored card.

Thickness Measurements and paint hiding power can be quickly and accurately determined with the Pfund crytometer and the Pfund paint film gage. A descriptive folder on these instruments is available. Koehler Instrument Co., Inc., 168-56 Douglas Ave., Jamaica 33, New York.
For more data, circle 76 on colored card.

Gold, Copper and Aluminum are now available in Cres-Lite brilliant, metallic bronze powders. Color card showing the 44 colors now available is free upon request. Special or matched colors can be made. Crescent Bronze Powder Co., 118 W. Illinois St., Chicago 10, Illinois.
For more data, circle 77 on colored card.

Instant Stripper—For metal or wood finishes. A non-flammable, non-toxic stripper which removes almost instantly, most finishes—enamels, either lacquer or synthetic (baked or air dried), paints, varnishes, etc. V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39, Illinois.
For more data, circle 78 on colored card.

"Electro-Cold Stripper" will strip vinyls, alkyds, japans, hammers, primers, wrinkles, enamels and epons in minutes. Is non-flammable, requires no heat or current. Complete data and testing sample free on request. Allied Finishing Specialties Co., 2641 W. Grand Ave., Chicago 12.
For more data, circle 79 on colored card.

Natural and Synthetic Pearl finishes in air dry or bake coatings for a variety of products are offered by Rona Pearl Corp., E. 21st & E. 22nd St., Bayonne, New Jersey. Apply to metal, plastic, wood or glass surfaces.
For more data, circle 80 on colored card.

For more data, circle 239 on colored card.

Water-Reducible Finishes by The Glidden Co., Industrial Paint Division, Cleveland 14, Ohio, gives better insurance against fire hazards. Glidden's water-reducible finishes contain no combustible or toxic solvents. No matter what your product, process or problem, Glidden finishes plus Glidden technical service can provide the answer.
For more data, circle 81 on colored card.

Moving Belts in the Ransburg No. 2 Process, increase paint mileage and improve quality. Information on the Ransburg No. 2 Process and the No. 2 Process Electrostatic Hand Gun, which can be used in either conveyorized or non-conveyorized painting, is available. Ransburg Electro-Coating Corp., Box 23122, Indianapolis 23, Indiana.
For more data, circle 82 on colored card.

Hardex Clear Lacquers for Brass give high gloss and can be applied by spray or dip; air dry to bake hardness; have good adhesion to polished brass; will not blush nor discolor, remains flexible. Hardex lacquers are made for all metal surfaces. New England Coating Works, Inc., 349 Bryant Ave., New York 59, N. Y.
For more data, circle 83 on colored card.

Automatic Viscosity Control for spraying, flow coating and dipping improves quality of painting and finishing by providing continuous uniformity of paint material. Norcross Corp., 247 Newtonville Ave., Newton 58, Massachusetts.

For more data, circle 84 on colored card.

"RediRay Modular Infrared Ovens fit any finishing system. Provide uniform heat with no hot spots; high efficiency with no bulbs, tubes or reflectors to get dirty, burn out or break; complete flexibility, adaptable to any conveyor system. Engineering Data Sheet No. 112 describes RediRay and its applications. Infra-Red Systems, Inc., 240 Rt. 23, Riverdale, N. J.

For more data, circle 85 on colored card.

ChromiCoat Conversion Coating by Oakite Products, Inc., 20 Rector St., New York 6, N. Y., gives a thin, golden uniform coating on aluminum. ChromiCoat blocks corrosion and forms a perfect anchor for paint, and it protects for hundreds of hours under the ordeal of self-spray tests. A complete line of materials for aluminum, such as etch and non-etch cleaners, barrel finishing compounds, paint strippers and forming lubricants are also available.

For more data, circle 86 on colored card.

NEW METHOD DIRECT ON SCREEN

Tough Long Lasting Screens in Silk, Nylon Or Metal Cloth—Made 100% To Your Artwork—Positive—Blue Print—Negatives—Positives For Your Use. More Prints Per Screen.

Jay & Jay Silk Screen Service, Inc.

Post Office Box 243, Connersville, Indiana

Phones: 2534—2246-M—3301

For more data, circle 240 on colored card.

Nacromer Silver Finishes are bright; have lustre and sparkle. By applying a top coat of Nacromer over the appropriate base pigments, you get a clear lustrous silver, free of "tattle-tale grey." Nacromer may also be used to create tarnish-proof brass and bronze finishes. Nacromer is compatible with most coating vehicles and can be applied to almost any material by the usual coating methods. Revised edition of 8-page Nacreous Pigment Handbook now available. The Mearl Corp., 41 East 42nd St., New York 17.

For more data, circle 87 on colored card.

Paint Overspray can be reprocessed in our plant to conform to its original specification in physical and chemical properties. Paint waste overspray or paint sludge can be used again in regular production at considerable savings. Mixed color sludges can be converted to primers. W. C. Richards Co., 3108 W. Vermont St., Blue Island, Illinois.

For more data, circle 88 on colored card.

Metal Coatings for your standard requirements or for the solution to a unique problem, can be formulated in the modern research laboratories of Gordon Bartels Co., 2600 Harrison Ave., Rockford, Ill. Bartels Metal Decorating coatings have the consistent order-to-order uniformity. For metal decorating problems consult Gordon Bartels.

For more data, circle 89 on colored card.

BFC Chromic Acid (flake) is available from Better Finishes & Coatings, Inc., 268 Doremus Ave., Newark 5, N. J. Every batch is checked, and every can filled with a full weight of extra-high quality Chromic Acid. Prompt delivery from factory and nearby distributor stocks.

For more data, circle 90 on colored card.

PAINT HIDING POWER and THICKNESS MEASUREMENTS

Quickly and Accurately Determined with the PFUND CRYPTOMETER and the PFUND PAINT FILM GAGE

Write your laboratory supply house for descriptive folder or direct to...

KOEHLER INSTRUMENT COMPANY, INC., 168-56 Douglas Ave., Jamaica 33, N. Y.

For more data, circle 211 on colored card.

Silk Screens in silk, nylon or metal cloth. Made to your specifications from your blueprint, art work or positive. More prints per screen. New method direct on screen. Jay & Jay Silk Screen Service, Box 243, Connersville, Indiana.
For more data, circle 91 on colored card.

Exposure Test. Actual weathering, corrosion and sunlight tests, direct and under glass for quick predetermination of durability and permanency in southern Florida by South Florida Test Service, Inc., 4301 N. W. 7th St., Miami 44, Fla.
For more data, circle 92 on colored card.

Hi-Sol Enamel Reducer offers substantial savings in ready-to-spray paint costs. In addition, sagging is practically eliminated and a smoother, better looking finish obtained. Potter Paint Company, Cortland 1, New York and Cambridge City 1, Ind.
For more data, circle 93 on colored card.

H-Guns and HydroAirless Systems by The Spee-Flo Company, Houston 11, Texas, are featured in recent literature and publicity. Features of the H-Gun are total atomization, even without heat, perfect feathered spray pattern with proper overlap, no flooding or pig-tail characteristics, better quality finish with up to 40% material savings. Catalog free.
For more data, circle 94 on colored card.

"Flex-A-Foam" Dust Masks are form-fitting in design, attractive styling and good filtering efficiency. Masks are feather-like in weight and give easy-breathing comfort. Mask contains only four long-wearing, inter-locking parts, all washable. Pure latex filter outwears throw-away type. Flexo Products, Inc., Westlake, O.
For more data, circle 95 on colored card.

Industrial Finishes, specially formulated for your production line and products, give your products a salable appearance. For a perfect protective and decorative finish for your purpose, consult the Rockford Varnish Co., Rockford, Illinois.
For more data, circle 96 on colored card.

Hy-Spray Airless Spray Equipment by Balcrank, Inc., 10 Disney St., Dept. IF-1, Cincinnati 9, Ohio, handles water-base paints as well as all other types of paint. Complete line of regular air-operated paint spray equipment, transfer and materials pumps are available.
For more data, circle 97 on colored card.

Dry-Off Ovens, Bake Ovens, washing machines, Bonderizing units, dip tanks, spray booths, flo-coaters, conveyors, etc, are a few of the many types of finishing equipment offered by Michigan Oven Co., Finishing Equipment Dept., 423 Brainard, Detroit 1, Mich. MOCO Bulletin showing typical finishing system applications and specifications is available without cost or obligation.
For more data, circle 98 on colored card.

Non-Grain-Raising Stains, lacquers and everything for finishing fine furniture, cabinets, pianos, etc., plus styling and technical service—in Southeast U. S. A., are available from Snyder Bros. Co., P. O. Box 631, Toccoa, Georgia.
For more data, circle 99 on colored card.

"Rock-A-Drum", the vertical drum truck picks up 55-gal drums, rolls them over for side draining and becomes a stand on 3-in. wheels. Tilts the drum for pouring contents easily. Morse Mfg. Co., Inc., 763 W. Manlius St., East Syracuse, N. Y.
For more data, circle 100 on colored card.

Melaqua 600 is water-soluble, hard, solvent-resistant, colorful and non-inflammable. Melamine resin makes Melaqua hard and solvent-resistant and is combined with an acrylic polymer for color, high gloss and weather resistance. Melaqua can be the vehicle for a baking enamel with good characteristics of both the emulsion system and water-soluble system. American Cyanamid Co., Plastics & Resins Divn., 30 Rockefeller Plaza, New York 20, N. Y.
For more data, circle 101 on colored card.

INCREASE PRODUCTION! CUT COSTS!
Your paint is factory fresh ready for use when mixed in a
MIRACLE PAINT MIXER
5 GAL. MODEL
¼ Pt. to 55 Gal. Mixers Available
Write to:
MIRACLE PAINT REJUVENATOR CO.
500 NORTH ROBERT STREET ST. PAUL 1, MINNESOTA
For more data, circle 241 on colored card.

Tack Rags for use prior to painting, to wipe off and hold dust and dirt particles too small to see, but which might leave a blemish on the final coat of paint or finish, are available from Ideal Chemical Co., 1499 Dean Drive, South Euclid 21, O.

For more data, circle 102 on colored card.

Custom-Made Finishes by O'Brien Corp., South Bend, Ind., are of the finest quality, most enduring beauty and greatest economy. An O'Brien specialist will be assigned to your specific problem, analyze your needs and create the finish demanded by your product.

For more data, circle 103 on colored card.

"Prep" Products for Phosphating, clean'ng, conversion coating, paint bonding, metal conditioning and rust removing are available from Neilson Chemical Co., 2306 Gainsboro, Detroit 20 (Ferndale), Mich. "Prep" Products are available for steel, aluminum, zinc, cadmium, etc. Write, outlining your needs, and recommendations will be made.

For more data, circle 104 on colored card.

"dri-Quik" Infra-Red Ovens have no bulbs or sockets to burn out; temperature can be set to within 1 degree of heat desired; maintenance costs are at a minimum. Can be used on products of wood, plywood, hardboard, etc. Field test equipment available to show you what can be done with your product and finishes. Dry Clime Lamp Corp., Greensburg, Indiana.

For more data, circle 105 on colored card.

Drawer-Glide Waxes, color or colorless, penetrate deep into pores of the wood thereby giving the drawers dimensional stability, a moisture-proof coating and lubricating the surfaces for easy sliding. Drawer Glide Waxes also beautify the wood and give surfaces a smooth, waxy feel. The Prillaman Co., P. O. Box 1024, Martinsville, Virginia.

For more data, circle 106 on colored card.

Armorhide Coating is a tough, textured finish resembling leather. Has good abrasion and chemical resistance. Can be applied to assembled metal parts and products; covers all edges making them smooth and free from sharpness. Sprayed and fused on the metal, it is applied at high solids in a thickness of 10-15 mils coating. No solvents are required. Armorhide bulletin and sample panel are available. John L. Armitage & Co., 245 Thomas St., Newark, N. J.

For more data, circle 107 on colored card.

"Bull Dog Shaker," Model 4, conditions paint to brushing consistency in one to 5-gal. cans, without opening the can. Time required is from two to 30 minutes, depending on paint formulation and length of time paint has been on the shelf. Easy to operate. Grenier & Co., Inc., 13142 Rexford St., Blue Island, Ill.

For more data, circle 108 on colored card.

Metal Fabricating Catalog

If you fabricate metal products you will want to read the 6-page illustrated bulletin SW-60 on fabrication by Mahon.

Items covered include cutting and roll forming machines, press brakes, arc welding, milling and boring machines, heat treating equipment, shot blasting and spray painting facilities. A copy will be sent on request to Steel-Weld Division of The R. C. Mahon Co., Detroit 34.

For more data, circle 109 on colored card.

Ultrasonic Degreasing

Availability of an 8-page, illustrated catalog describing ultrasonic cleaning applications and equipment is offered by the Phillips Mfg. Co., 3475 W. Touhy Ave., Chicago 45, Ill. Bulletin 23 explains in detail the description and features of tank transducers and ultrasonic generators for use in large and small scale degreasing operations.

For more data, circle 110 on colored card.

Mask Washing Machines

A new brochure on mechanical machines for washing masks used in spray paint decorating has just been issued by Conforming Matrix Corp., 765 New York Ave., Toledo 11, Ohio. It includes Model W-1500-S machines designed for quick cleaning of small masks and Model W-7200 high pressure washers for large size masks.

For more data, circle 111 on colored card.

Cleaning, Coating Small Parts

A means of cleaning and coating tools and machine parts is described in a new 4-page brochure prepared by the Container Division of Jones & Laughlin Steel Corp., 3 Gateway Center, Pittsburgh 30, Pennsylvania.

For more data, circle 112 on colored card.

Lau Heads Binks Customer Demonstration Dept.

George Lau has been appointed as Manager of the Customer Demonstration Department of The Binks Mfg. Co., Chicago, Ill. The company is a major designer and manufacturer of spray painting equipment and systems.

The new department was recently established by Binks to test customer's finishing materials, and provide comparative testing by which the customer can select the equipment best suited to apply these materials.

Mr. Lau has been with Binks for five years, as assistant manager of the electrostatic spray painting equipment department, and as a customer service representative in the automatic equipment department.

Prior to that, he worked for 12 years in the field of spray painting equipment. He is familiar with all types of spray painting systems.

W. A. Bittenbender; Glidden Co.

Dr. William A. Bittenbender has been appointed Corporate Director of Research for The Glidden Co. In this position Dr. Bittenbender will be the senior technical executive of the company. He will have over-all responsibility for organizing, planning, and directing the company research programs, including those in the three main operating divisions—Paint, Foods and Chemicals.

Bee Chemical Co.'s Metallizing Coatings at Plastics Show

Exhibiting at the June National Plastics Exposition in New York, Bee Chemical Co., Lansing, Ill., will introduce several new coatings systems used in conjunction with the vacuum metallizing of bottle closures and automotive parts.

A new base and top coat alcohol-resistant system for thermoplastic and phenolic bottle closures makes possible low temperature baking so that thermoplastic cap liners are not affected.

A new coatings system now in use on metallized automotive arm-rests provides exceptional hardness and abrasion resistance for the protection of the metallic film.

The company will also show its new lacquer-type coating for polyolefins at the Exposition. The coating is fast-drying and retains excellent flexibility properties and adhesion on aging. The company will demonstrate proper techniques of flame-treating polyolefins in its exhibit.

Dr. Thompson, Research Director For Archer-Daniels-Midland

Dr. William E. Thompson, San Antonio, Texas, has been appointed director of research for Archer-Daniels-Midland Co., Minneapolis, Minn. Dr. Thompson formerly was director of the department of Chemistry and chemical engineering at Southwest Research Institute.

DuBois To Build Toronto Plant

DuBois Chemicals of Canada Ltd., a wholly owned subsidiary of DuBois Chemicals, Inc., Cincinnati, Ohio, plans the immediate construction of a plant in North York Township, Toronto.

The new plant will be equipped to manufacture the complete line of DuBois products and will also include laboratory facilities for formulation control, research and customer service.

New Coatings Symposium at N. D. State University

The Coatings Technology Department of The North Dakota State University announces that the Third Annual Symposium on New Coatings and New Coatings Raw Materials will be held June 5 to June 8 (noon), 1960, on the University Campus.

This year's meeting will stress the newer developments in pigments. Other papers will concern additives, water-thinned vehicles and new studies relative to coatings. The subject matter will be discussed by 18 specialists.

The complete list of titles and speakers and housing facilities will be announced later. The Coatings Technology Department welcomes inquiries.

Fostoria Personnel Changes

Fostoria Corp., Fostoria, Ohio, has named the following persons as Regional Sales Managers: H. W. McClure, Eastern; R. B. Strouse, Central; W. F. Carlin, Midwest; R. D. Turgeon, Western; and H. A. Meanor as Manager of Government Sales.

Rooney, Sales Representative For Bradley & Vrooman Co.

Mr. Robert L. Rooney has joined the Bradley & Vrooman Co., Chicago, Ill., as technical sales and service representative covering Eastern Ohio, Western New York, Western Pennsylvania and West Virginia.

He will call on users of industrial coatings, specialty finishes and fluid plastics (plastisols, organisols, etc.).

Design Engineering Show in Detroit, May 22 to 25

The Design Engineering Show, taking advantage of the opening of Cobo Hall, will move to Detroit for the first time in 1961. The exposition and the concurrent conference will take place May 22 through 25.

The machine design division of the American Society of Mechanical Engineers will sponsor the conference for the sixth consecutive year.

The show will be the largest in its history and will occupy all available space in the huge hall. More than 400 companies will exhibit.

"Microfibres Inc.," New Name of Rayon Processing Co.

"Microfibres, Inc." is the new name of Rayon Processing Co. of R. I., Pawtucket, R. I., pioneer producer of flock in the U.S.A. "Our new name," states Norman E. McCulloch, Jr., President, "is much more indicative of what we actually do. We started in 1926 manufacturing wool and cotton flock for textile printing. The exploding plastics industry drew us into reinforcing fillers of flock fibers; each new plastic required a new or modified synthetic fibrous filler.

"Surface coating flock, introduced in Europe, has attained wide popularity in this country for paper converting, apparel, footwear, and other decorative and functional uses. Here again, each new synthetic fiber added versatility to the range of specifications our product line could meet, particularly for industrial uses.

"We are no longer primarily a rayon processing company. Instead, we offer a complete range of precision-cut natural, synthetic and metallic fibers."

Pipkorn Expands Plant

W. E. Pipkorn (WEPCO) Mfg. Co., maker of formed wire products, custom wire fabrications and production aids, has expanded its plant at 2211 W. County Rd., D, St. Paul 12, Minn.

Its products include wire hooks of many kinds, wire racks for industrial painting, wire parts trays for materials handling, wire baskets and special purpose wire pallets, all coated with polyvinylchloride.

Schools of Refinishing

Marketing through demonstration, instruction and supervised practice with the product has been successfully undertaken by Mohawk Furniture Finishing Products, Inc., 175 W. Main St., Amsterdam, N. Y.

By running several "schools" each year, hundreds of furniture finishers, manufacturers, and retailers throughout the United States have become well acquainted with the various products manufactured by Mohawk, to make furniture refinishing easier and the results more professional. The schools are held for a two-day period.

Compressed Air Accessories

Wilkerson Corp., 1627 W. Mansfield Ave., Englewood, Colorado, announces the publication of an 8-page colorful catalog which illustrates a line of filters for converting regular factory compressed air to air so pure it is usable for operating pneumatic precision instruments. Air regulators and air accessories are also included. Included also is Wilkerson's new dehydrator equipment for lowering the dew point of compressed air and for extreme removal of oil traces.

For more data, circle 113 on colored card.

Cunningham; Ross Engineering

Denver Cunningham has joined the sales engineering department of J. O. Ross Engineering Division of Midland-Ross Corp.

Mr. Cunningham has had experience in the textile and chemical fields. He will be in the Atlanta office of Ross and will handle sales of drying equipment in such industries as textiles and metal finishing.

Merits of Zinc Rich Paint

A new 4-page brochure describes Z.R.C. (Zinc Rich Coating) and explains how it can be brushed or sprayed on iron or steel surfaces to provide galvanic (cathodic) protection against rust and rust creepage. The Sealube Co., manufacturing chemists, 14 Valley St., Wakefield, Mass.

For more data, circle 114 on colored card.

Metal Cleaning Nozzle Bulletin

An 8-page, 8½x11 Bulletin 106 describes the complete Spraying Systems Co. line of spray nozzles and accessories used in the metal finishing field. It contains a reference chart and lists applications and types of nozzles used. The bulletin is a spray nozzle reference manual on washing, rinsing, fogging or wetting, coating and related operations.

For a free copy, write Spraying Systems Co., 3240 Randolph St., Bellwood, Illinois.

For more data, circle 115 on colored card.

New Phosphatizing Process By Diversey

A new phosphatizing process that deposits a heavy, crystalline zinc phosphate coating on iron and steel has been developed by The Diversey Corp., 1820 W. Roscoe St., Chicago 13, Ill.

The company reports that its new Diverfos Z-1 zinc phosphatizer performs equally well in soak or spray operations. It is specially formulated to keep sludge formation at a minimum.

In spray washer operations, coatings weighing from 150 to 300 milligrams per square foot are produced. Soak tank processing produces coatings weighing 300 to 600 milligrams per square foot. The resultant coating, which has a uniform texture and dark steel-gray color, conforms to Specification MIL-C-490, Grade I Process.

For more data, circle 116 on colored card.

Electro-Formed Metal Spray Painting Masks

A new brochure which describes and illustrates all of the various types of masks employed today in the rapid, accurately controlled, multiple color wet painting of mass produced products has just been issued by Conforming Matrix Corp., 765 New York Ave., Toledo 11, O.

Examples of line production spraying with these electro-formed metal masks are illustrated. Requirements for mask ordering are also detailed.

For more data, circle 117 on colored card.

CLASSIFIED ADVERTISING

The rate on ads appearing in this department is $1.00 per line of 6-pt. light face type, per insertion. Minimum charge, $5.00. Adds set in 8-pt. extra bold face type cost $2.00 per line, per insertion.

There may be certain firms or individuals to whom you do not want your reply sent. Simply address your communication to the box number in the ad and attach a separate list of names. Place both in a separate envelope addressed to Industrial Finishing Magazine, 1142 N. Meridian St., Indianapolis 4, Ind. If the advertiser is on the list you submit we will then destroy your letter. Names of advertisers using box numbers not revealed.

POSITION WANTED

As supervisor in wood finishing department. 25 years' experience in lacquers, enamels; water and oil stains, roll on finishes; 15 years' conveyor experience. Letters of past performances sent on request. Past 2 years employed as trouble-shooter by different companies to increase production and lower finish costs. Will relocate for a responsible company. L. PHINNEY, 286 W. State St., Salamanca, New York. Phone, 2242.

SALESMAN WANTED

For industrial paints and lacquers. South Jersey and Philadelphia territory. Salary and commission. Excellent opportunity for the right man. Address IF-838, care Industrial Finishing.

CAN YOU WRITE?

If you can write a letter or tell how a cleaning-painting or finishing process operates, or give an account of some trouble shooting experience, we have an interesting proposition for you. Address IF-835, care Industrial Finishing.

WOOD FINISHING SUPERVISOR.

Here is an opportunity to supervise the entire finishing operation for a major manufacturer known for top quality production of bedroom, living room and dining room furniture for over half a century. Excellent salary with an assured future for the man who can qualify as finisher and manager. Write BOX 531, High Point, N. C.

LACQUER FORMULATOR WANTED.

Industrial Finishes Formulator wanted with background in wood furniture finishes and enamels. Excellent opportunity with reputable company. Midwest location. Address IF-836, care Industrial Finishing.

DIRECT SALES REPRESENTATIVE WANTED.

Well-known manufacturer of Industrial Pumps and Spray Equipment has opening for top rate sales representative in the middle area of the United States. Requires some background in industrial finishing. Salary and bonus arrangement. Address IF-837, care Industrial Finishing.

SALESMEN WANTED INDUSTRIAL METAL FINISHES.

Our expanding sales and research program has created two openings for experienced industrial finish salesmen in Central Ohio and West Virginia.

Full details regarding our entire program will be given to qualified men upon inquiry by letter. Personal interviews at our expense.

All correspondence will be held in strict confidence. Address J. C. Hendershot, Vice President in Charge of Sales, RELIANCE VARNISH CO., 4730 Crittenden Drive, Louisville 9, Ky.

PAINT SALESMAN WANTED.

Old established industrial finishes company located in Newark, N. J., wants an experienced salesman with a following in this field. We are ready to turn over a sizable number of house accounts to the right man. Salary and commission. Give complete background in first letter. All replies will be kept in strict confidence. Address IF-765, care Industrial Finishing.

INDUSTRIAL FINISHES SALESMEN.

Experienced industrial finishes salesmen needed to cover our expanding business. Territories are growing in all the states within a 350-mile radius of Cleveland, Ohio. Our company is a leader in *product finishes*, and we can prove the superior quality of our coatings. If you are *ambitious*, but dissatisfied with your present company's limiting policies, investigate our excellent line and our liberal commission plan. Write: Sales Promotion Department, Ferbert-Schorndorfer Co., 12815 Elmwood Ave., Cleveland 11, Ohio. All replies confidential.

ATTENTION: ALL FINISH SALESMEN.

If your present line does not include varnish, you are missing a bet. PERFEX VARNISHES are unexcelled (yes, unequalled) and are well known by volume finish users. Look at our display advertisement on page 83 of this magazine. If you are interested in the possibility of taking on PERFEX VARNISH in addition to your present line, write us. All replies will be held in strict confidence. PERFECTION PAINT & COLOR CO.

TECHNICAL SALES.

Men well indoctrinated in organic finishing who desires a sales assignment are needed for challenging and rewarding positions in Technical sales.

Reply to Marketing Director, KELITE CORPORATION, 81 Industrial Road, Berkeley Heights, New Jersey, giving resume which includes education, complete work experience and interests.

REPRESENTATIVE WANTED.

Nationally-known finishing supply house wants representation for southern and middle western territories. Attractive proposition in selling. Address IF-839, care Industrial Finishing.

PRODUCT LICENSE TO MANUFACTURE.

One of the largest anodizing companies in Britain with manufacturing capacity, would be interested to hear of goods that could be manufactured profitably under license, for sale in the U.K. Address IF-840, care Industrial Finishing.

WANTED.

Dirty solvents and thinners. Please send samples. Have clean reclaimed solvents for sale. Modern efficient solvent recovery service. Will process for customers, material at fraction of the original cost. ACME RECLAIMING, Inc., 1915 20th Ave., Rockford, Illinois.

DIRTY THINNERS AND SOLVENTS WANTED.

Send samples and letters giving approximate contents. GET CASH FOR SCRAP. THE JOHANN COMPANY, 13900 Grant St., Dolton, Illinois. Phone Dolton 4850.

FOR SALE
NU-IZE ABRASIVE DISCS

65M 7" x ⅞ Grit 100 Type C
SAVE 60%
Also large quantities of 4", 5" & 6" x ⅞, grits 24, 36, 50, 60, 80 and 100.

Write for price list and samples.

FAYETTE DISTRIBUTORS, INC.
202 W. 28th St.
Connersville, Indiana

LET US "NU-IZE" YOUR ABRASIVE DISCS.

Send your coated abrasive grinding discs to us. Our reconditioning "Nu-Ize" process restores them to a high degree of efficiency—not a recoat process. Over ½-million "Nu-Ize" abrasive discs were sold last year.

We are also interested in buying your used abrasive discs. Write us for further details.

FAYETTE DISTRIBUTORS, INC.
202 W. 28th St.
Connersville, Indiana

FOR SALE.

Flow Coater less than two years old. Rotating bar type, low pressure, with oven attached. Reasonably priced for quick sale. In New York City area. Suitable for coating multiple shaped pieces. METAPLAST PROCESS CORP., 34-51 56th St., Woodside 77, Long Island, N. Y.

FOR SALE.

Schmutz 50-in. wide top printer. Complete with 3 engraving rolls. Extra parts: offset roller, fountain roller, doctor blades, assembly for 9¾-in. diameter engraving rollers. Excellent condition, 1960 manufacture. Price, $15,000.

Filling machine. Schmutz bottom coater for plywood and chipboard panels. Like new, 1959. Price, $7,300.

DeVilbiss 4-ft. reciprocating arm spray, complete with two guns and controls. $1,100.

Paasche automatic plywood groove striping guns with extra parts, $225.

Binks 10-ft. wide water wash spray booth, $850.

Binks 30-gallon paint pot, $150. Note: All above equipment subject to prior sale.

WEBSTER-ROBINSON MACHINERY
1535 Bay Street, Tacoma, Wash.

BARGAINS IN FINISHING EQUIPMENT

WE CARRY A LARGE STOCK OF REBUILT USED FINISHING EQUIPMENT INCLUDING BINKS, ECLIPSE AND PAASCHE AUTOMATIC SPRAY MACHINES

SPRAY BOOTHS	CONVEYORS	PHOSPHATIZING UNITS
MIXING TANKS	FANS	CENTRIFUGAL ENAMELERS
PAINT HEATERS	OVENS	DEGREASERS
PRESSURE TANKS	LIGHTS	PUMPS, MOTORS, ETC.

GENERAL EQUIPMENT AND TRADING CO. • 2629 W. GRAND AVE., CHICAGO 12, ILL.

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